

125  
6-8-05

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» Key

IEEE JNL IEEE Journal or  
MagazineIEE JNL IEE Journal or  
MagazineIEEE CNF IEEE Conference  
ProceedingIEE CNF IEE Conference  
Proceeding

IEEE STD IEEE Standard

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IEEE JNL IEEE Journal or Magazine

IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

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☐ Check to search only within this results setDisplay Format: ☒ Citation ☐ Citation & Abstract

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A maximum of 100 results are displayed, 25 to a page, sorted by Relevance in Descending order.

[» View Session History](#)[» New Search](#)[» Key](#)

IEEE JNL IEEE Journal or Magazine

IEEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

Modify Search

☐ Check to search only within this results setDisplay Format: ☒ Citation ☐ Citation & Abstract

No results were found.

Please edit your search criteria and try again. Refer to the Help pages if you need assistance revising your search.

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## Refine Search

### Search Results -

Terms	Documents
L3 and (maxim\$2 same (entry or entries))	0

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

(hash\$3 same lex\$5) and (maxim\$ same  
 (entry or entries))

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Recall Text

Clear

Interrupt

### Search History

DATE: Wednesday, June 08, 2005   [Printable Copy](#)   [Create Case](#)

<u>Set</u> <u>Name</u> side by side	<u>Query</u>	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>			
<u>L5</u>	L3 and (maxim\$2 same (entry or entries))	0	<u>L5</u>
<u>L4</u>	L3 and (maxim\$ same (entry or entries))	1	<u>L4</u>
<u>L3</u>	hash\$3 same lex\$6 same key\$3	25	<u>L3</u>
<u>L2</u>	hash\$ same lex\$ same key\$	32	<u>L2</u>
<u>L1</u>	(hash\$ same lex\$ same key\$2) and (("n-gram") or ngram\$2 or bigram\$2 or ("bi-grams") or rigram\$2 or ("tri-gram"))	2	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L6 and ((maximiz\$6 or maximis\$6 or optimiz\$6 or optimis\$6) near (entry or entries or key\$2 or word\$2))	0

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L8

Refine Search

Recall Text

Clear

Interrupt

### Search History

 DATE: Wednesday, June 08, 2005   [Printable Copy](#)   [Create Case](#)

<u>Set</u> <u>Name</u> side by side	<u>Query</u>	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
<u>L8</u>	L6 and ((maximiz\$6 or maximis\$6 or optimiz\$6 or optimis\$6) near (entry or entries or key\$2 or word\$2))	0	<u>L8</u>
<u>L7</u>	L6 and ((maximiz\$6 or maximis\$6 or optimiz\$6 or optimis\$6) same (entry or entries or key\$2 or word\$2))	6	<u>L7</u>
<u>L6</u>	(L4 or L5) and (hash\$3 same lex\$5)	25	<u>L6</u>
<u>L5</u>	704/9-10.ccls.	1117	<u>L5</u>
<u>L4</u>	707/\$.ccls.	27094	<u>L4</u>
<u>L3</u>	(hash\$3 same lex\$5) and key\$3	50	<u>L3</u>
<u>L2</u>	(hash\$3 same lex\$5) and (maxim\$2 same key\$3)	2	<u>L2</u>
<u>L1</u>	(hash\$3 same lex\$5) and (maxim\$2 same (entry or entries))	8	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L12 and (hash\$3 same lex\$5)	0

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L13

Refine Search

Recall Text

Clear

Interrupt

### Search History

DATE: Wednesday, June 08, 2005   [Printable Copy](#)   [Create Case](#)

<u>Set</u> <u>Name</u> side by side	<u>Query</u>	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
<u>L13</u>	L12 and (hash\$3 same lex\$5)	0	<u>L13</u>
<u>L12</u>	(maximiz\$6 or maximis\$6 or optimiz\$6 or optimis\$6) near (entry or entries or key\$2 or word\$2)	1240	<u>L12</u>
<u>L11</u>	L10 and L3	0	<u>L11</u>
<u>L10</u>	L9 and ((maximiz\$6 or maximis\$6 or optimiz\$6 or optimis\$6) near (entry or entries or key\$2 or word\$2))	48	<u>L10</u>
<u>L9</u>	704/\$.ccls.	18920	<u>L9</u>
<u>L8</u>	L6 and ((maximiz\$6 or maximis\$6 or optimiz\$6 or optimis\$6) near (entry or entries or key\$2 or word\$2))	0	<u>L8</u>
<u>L7</u>	L6 and ((maximiz\$6 or maximis\$6 or optimiz\$6 or optimis\$6) same (entry or entries or key\$2 or word\$2))	6	<u>L7</u>
<u>L6</u>	(L4 or L5) and (hash\$3 same lex\$5)	25	<u>L6</u>
<u>L5</u>	704/9-10.ccls.	1117	<u>L5</u>

<u>L4</u>	707/\$.ccls.	27094	<u>L4</u>
<u>L3</u>	(hash\$3 same lex\$5) and key\$3	50	<u>L3</u>
<u>L2</u>	(hash\$3 same lex\$5) and (maxim\$2 same key\$3)	2	<u>L2</u>
<u>L1</u>	(hash\$3 same lex\$5) and (maxim\$2 same (entry or entries))	8	<u>L1</u>

END OF SEARCH HISTORY



# **STIC Search Report**

## **EIC 2100**

**STIC Database Tracking Number: 155733**

**TO: Jean Fleurantin**  
**Location: RND 3B29**  
**Art Unit : 2162**  
**Wednesday, June 08, 2005**

**Case Serial Number: 09/263068**

**From: Carol Wong**  
**Location: EIC 2100**  
**RND 4A30**  
**Phone: 272-3513**

**carol.wong@uspto.gov**

### **Search Notes**

Dear Examiner Fleurantin,

Attached are the search results (from commercial databases) for your case.

Color tags mark the patents/articles which appear to be most relevant to the case.

Please call if you have any questions or suggestions for additional terminology, or a different approach to searching the case.

Thanks,  
Carol





File 348:EUROPEAN PATENTS 1978-2005/Jun W01  
(c) 2005 European Patent Office  
File 349:PCT FULLTEXT 1979-2005/UB=20050602,UT=20050526  
(c) 2005 WIPO/Univentio  
File 324:German Patents Fulltext 1967-200521  
(c) 2005 Univention

Set	Items	Description
S1	1479791	MAXIMUM OR MAXIMIS? OR MAXIMIZ? OR GREATEST OR LARGEST OR - HIGHEST OR OPTIMAL? OR OPTIMUM? OR OPTIMIS? OR OPTIMIZ?
S2	75671	S1(2W) (ENTRY? OR ENTRIES OR POPULAT? OR CONTENT? ? OR NUMB- ER? ? OR QUANTITY? OR QUANTITIES OR NUMERIC?? ?)
S3	9340	S1(2W) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TERMS OR TEMINOLOGY OR UNIT OR UNITS OR ITEM OR ITEMS)
S4	832	NGRAM? ? OR BIGRAM? ? OR (BI OR N)()GRAM? ?
S5	991034	COMPRESS? OR COMPACT? OR PACK? ? OR PACKING OR PACKED
S6	2597386	LENGTH? OR SIZE? ? OR DIMENSION? ? OR VOLUME? ? OR PROPORT- ION? ? OR SPACE OR SPATIAL
S7	305864	S6(2N) (MINIMI? OR SHORT?? ? OR SHORTEN? OR CONDENS??? ? OR CONDENSAT? OR REDUC????? ? OR RED? ? OR DIMIN? OR DECREAS? OR DECREM? OR ABBREVIAT?)
S8	47901	S6(2N) (KEY? ? OR STRING? ? OR WORD? ? OR CHARACTERSTRING? - OR SUBSTRING? OR LEXEME? OR MORPHEME? OR TERM OR TERMS)
S9	19806	LEXIC??? ? OR VOCABULAR? OR DICTIONAR?
S10	622554	CACHE? ? OR CONTAINER? OR RECEPTACLE? OR DATABASE? OR DATA- SET? OR DATABANK? OR DATASTORE? OR DATAFILE? OR DATA COLLECTIO- N?
S11	65	DATALIBRAR? OR DATADEPOSIT? OR DATAREPOSIT? OR DATAWAREHOU- S?
S12	194375	DATA() (BASE? ? OR SET? ? OR BANK? ? OR STORE? ? OR STOREHO- USE? OR FILE? ? OR COLLECTION? ? OR LIBRAR? OR DEPOSIT? OR RE- POSIT? OR WAREHOU? OR WARE()HOUSE?)
S13	10994	S10:S12(3N) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TER- MS)
S14	930078	TABLE OR TABLES OR TABULAR? OR ARRAY? ? OR HASHTABLE?
S15	2138	S2:S3(20N) (S4:S5 OR S7)
S16	36	S15(20N)S8
S17	21	S15(20N)S9
S18	2	S15(20N)S13
S19	162	S15(30N)S14
S20	56	S16:S18
S21	56	IDPAT (sorted in duplicate/non-duplicate order)
S22	56	IDPAT (primary/non-duplicate records only)
S23	17070	IC='G06F-017/30':IC='G06F-017/32'
S24	2486960	SEARCH? OR RETRIEV? OR FETCH? OR MATCH? OR COMPAR??? ? OR - COMPARISON? OR COMPARAT? OR EXTRACT? OR QUERY? OR QUERIE? ?
S25	21	S19(20N)S24
S26	2192	IC='H03M-007/30':IC='H03M-007/48'
S27	18	S19 AND S26
S28	3	S19 AND S23
S29	36	S25 OR S27:S28
S30	31	S29 NOT S22
S31	31	IDPAT (sorted in duplicate/non-duplicate order)
S32	31	IDPAT (primary/non-duplicate records only)
?		

22/5,K/6 (Item 6 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01263229

METHOD AND APPARATUS FOR REDUCING THE TIME REQUIRED FOR COMPRESSING DATA  
VERFAHREN UND VORRICHTUNG ZUR REDUZIERUNG DER DATENKOMPRESSIONSZEIT  
PROCEDE ET DISPOSITIF PERMETTANT D'ACCELERER LA COMPRESSION DE DONNEES  
PATENT ASSIGNEE:

UNISYS CORPORATION, (842794), Township Line and Union Meeting Roads P.O.  
Box 500, Blue Bell, PA 19424-0001, (US), (Proprietor designated states:  
all)

INVENTOR:

YORK, Kenneth, Lindsay, 2130 Country Club Drive, Huntington Valley, PA  
19006, (US)

YORK, Thayer, Lindsay, 2130 Country Club Drive, Huntington Valley, PA  
19006, (US)

LEGAL REPRESENTATIVE:

Modiano, Guido, Dr.-Ing. et al (40786), Modiano, Josif, Pisanty & Staub,  
Baaderstrasse 3, 80469 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 1201036 A1 020502 (Basic)  
EP 1201036 B1 030423  
WO 2001010037 010208

APPLICATION (CC, No, Date): EP 2000950498 000719; WO 2000US19871 000719

PRIORITY (CC, No, Date): US 364427 990730

DESIGNATED STATES (Pub A): AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE;  
IT; LI; LU; MC; NL; PT; SE; (Pub B): CH; DE; FI; FR; GB; LI

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: H03M-007/30

CITED PATENTS (EP B): US 4558302 A; US 4881075 A; US 5229768 A; US 5815096  
A

CITED PATENTS (WO A): XP 2150106

CITED REFERENCES (EP B):

SALOMON D: "DATA COMPRESSION: THE COMPLETE REFERENCE" 1998 ,  
SPRINGER-VERLAG, CHAPTER 3, APPENDIX H , NEW YORK, NY XP002150106 page  
112, paragraph 3.5; table 3.8 page 119, paragraph 3.7; figures  
3.10-3.13 page 123, paragraph 3.9 page 359, paragraph H.2;

CITED REFERENCES (WO A):

US 5229768 A

US 5815096 A

US 4558302 A

US 4881075 A

SALOMON D: "DATA COMPRESSION: THE COMPLETE REFERENCE" 1998 ,  
SPRINGER-VERLAG, CHAPTER 3, APPENDIX H , NEW YORK, NY XP002150106 page  
112, paragraph 3.5; table 3.8 page 119, paragraph 3.7; figures  
3.10-3.13 page 123, paragraph 3.9 page 359, paragraph H.2;

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 010404 A1 International application. (Art. 158(1))

Application: 010404 A1 International application entering European  
phase

Application: 020502 A1 Published application with search report

Examination: 020502 A1 Date of request for examination: 20020129

Grant: 030423 B1 Granted patent

Lapse: 040128 B1 Date of lapse of European Patent in a  
contracting state (Country, date): FI  
20030423,

Oppn None: 040414 B1 No opposition filed: 20040126

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200317	1515
CLAIMS B	(German)	200317	1417
CLAIMS B	(French)	200317	1805
SPEC B	(English)	200317	7545

Total word count - document A 0

Total word count - document B 12282

Total word count - documents A + B 12282

...SPECIFICATION 000 of the possible 224) addresses are filled, it is now possible to configure a **dictionary** of the type shown in Figure 8 to **optimize** the **number** of code **compression** bits between 9 and 16. Once the **dictionary** is filled with a **maximum number** of codes allowed by the number of code bits selected the data **compression** system transmits a reset code to the decoder or receiver and immediately precedes in the ...

22/5,K/9 (Item 9 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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01025036

Paging system employing text abstraction

Rufsystem mit automatischer Zusammenfassung von Texten

Systeme d'appel a abreviation textuelle

PATENT ASSIGNEE:

International Business Machines Corporation, (200120), New Orchard Road, Armonk, N.Y. 10504, (US), (Proprietor designated states: all)

INVENTOR:

Batchelder, Edward M., 10 Milton Road, Brookline, MA 02445, (US)

LEGAL REPRESENTATIVE:

Ling, Christopher John et al (80401), IBM United Kingdom Limited, Intellectual Property Department, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 915438 A2 990512 (Basic)

EP 915438 A3 000405

EP 915438 B1 041013

APPLICATION (CC, No, Date): EP 98204207 960814;

PRIORITY (CC, No, Date): US 514809 950814

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE

RELATED PARENT NUMBER(S) - PN (AN):

EP 786116 (EP 96928870)

INTERNATIONAL PATENT CLASS: G06F-017/30

CITED PATENTS (EP B): EP 361464 A; EP 650303 A; US 4955066 A; US 5396228 A

ABSTRACT EP.915438 A2

A text message abstraction system and method allowing for the selection of important pieces of information based upon a number of criteria and for the removal of unnecessary components of a message. The abstraction system of the present invention is provided with an input message, a command set and a maximum message length and attempts to generate a message conveying all of the important information contained within the text message but within the maximum message length constraint.

ABSTRACT WORD COUNT: 78

NOTE:

Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):

Change: 001206 A2 Legal representative(s) changed 20001020

Change: 20000405 A2 International Patent Classification changed:  
20000216  
Grant: 041013 B1 Granted patent  
Change: 040121 A2 International Patent Classification changed:  
20031203  
Change: 030219 A2 Legal representative(s) changed 20030102  
Assignee: 030219 A2 Transfer of rights to new applicant:  
International Business Machines Corporation  
(200120) Old Orchard Road Armonk, N.Y. 10504 US  
Examination: 030129 A2 Date of request for examination: 20001106  
Examination: 030312 A2 Date of dispatch of the first examination  
report: 20030122  
Application: 990512 A2 Published application (A1with Search Report  
;A2without Search Report)  
Search Report: 20000405 A3 Separate publication of the search report  
Change: 990804 A2 Inventor (change)  
LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	199922	351
CLAIMS B	(English)	200442	312
CLAIMS B	(German)	200442	281
CLAIMS B	(French)	200442	355
SPEC A	(English)	199922	5619
SPEC B	(English)	200442	5786
Total word count - document A			5971
Total word count - document B			6734
Total word count - documents A + B			12705

...SPECIFICATION word dictionary are compressed using a compressed code. A header is used to identify the **dictionary** used. Additionally, where a telephone number or an integer number appears, a header and a **compressed** format **optimised** for telephone **numbers** or for integers is used.  
European Patent Application 0 361 464 discloses a method and...

22/5,K/15 (Item 15 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00885532

**Image display device**

**Bildanzeigevorrichtung**

**Dispositif d'affichage d'image**

PATENT ASSIGNEE:

SHARP KABUSHIKI KAISHA, (260710), 22-22 Nagaike-cho, Abeno-ku, Osaka-shi,  
Osaka-fu 545-0013, (JP), (Proprietor designated states: all)

INVENTOR:

Nakamura, Yoshimasa, 492-201, Minosho-cho, Yamatokoriyama-shi, Nara  
639-11, (JP)

LEGAL REPRESENTATIVE:

Muller, Frithjof E., Dipl.-Ing. (8661), Muller Hoffmann & Partner  
Patentanwalte Innere Wiener Strasse 17, 81667 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 810552 A2 971203 (Basic)  
EP 810552 A3 990616  
EP 810552 B1 030730

APPLICATION (CC, No, Date): EP 97108315 970522;

PRIORITY (CC, No, Date): JP 96133847 960528

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06T-009/00

CITED PATENTS (EP B): US 5408328 A; US 5566283 A

# CITED REFERENCES (EP B):

PATENT ABSTRACTS OF JAPAN vol. 017, no. 531 (E-1438), 24 September 1993 & JP 05 145772 A (FUJITSU LTD), 11 June 1993  
 PATENT ABSTRACTS OF JAPAN vol. 096, no. 009, 30 September 1996 & JP 08 130652 A (NIPPON STEEL CORP), 21 May 1996  
 PATENT ABSTRACTS OF JAPAN vol. 018, no. 687 (E-1651), 26 December 1994 & JP 06 276103 A (MITSUBISHI ELECTRIC CORP), 30 September 1994  
 PATENT ABSTRACTS OF JAPAN vol. 017, no. 665 (E-1472), 8 December 1993 & JP 05 219358 A (DAINIPPON SCREEN MFG CO LTD), 27 August 1993  
 PATENT ABSTRACTS OF JAPAN vol. 014, no. 467 (E-0989), 11 October 1990 & JP 02 190080 A (FUJITSU LTD), 26 July 1990;

## ABSTRACT EP 810552 A2

The image display device of the present invention includes a clear code detecting section for detecting a clear code that is input in an arbitrary position beforehand in a compressed image file when carrying out decompression, a status information extracting section for extracting status information of the clear code, an information storing section for storing the clear code and the status information of the clear code, a stored information searching section for searching a clear code nearest to a partial decompression start position from the status information upon receiving a request for partial decompression, and a partial decompression starting section which determines the partial decompression start position in the compressed image file, and subsequently starts decompression from the partial decompression start position. The described arrangement permits an intermediate access to the compressed image file of dictionary self-updating type, thereby realizing high speed decompression while reducing a required memory capacity to minimum.

ABSTRACT WORD COUNT: 152

## NOTE:

Figure number on first page: 1

## LEGAL STATUS (Type, Pub Date, Kind, Text):

Examination: 020327 A2 Date of dispatch of the first examination report: 20020206  
 Application: 971203 A2 Published application (Alwith Search Report ;A2without Search Report)  
 Oppn None: 040721 B1 No opposition filed: 20040504  
 Grant: 030730 B1 Granted patent  
 Search Report: 990616 A3 Separate publication of the European or International search report  
 Examination: 991103 A2 Date of request for examination: 19990902

LANGUAGE (Publication,Procedural,Application): English; English; English

## FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	199711W4	974
CLAIMS B	(English)	200331	698
CLAIMS B	(German)	200331	561
CLAIMS B	(French)	200331	769
SPEC A	(English)	199711W4	8106
SPEC B	(English)	200331	8423
Total word count - document A			9082
Total word count - document B			10451
Total word count - documents A + B			19533

...SPECIFICATION are simple digital data, it is not difficult to store all the data.

However, the **compression** /decompression system in the GIF is based on the LZW system of a **dictionary** having a **maximum number** of **entries** of 4096. Further, among the 4096 entries, the number of empty entries or the contents of the entries (second **dictionary** ) are subjected to change

during the process of decompressing the same image. Furthermore, the dictionary...

...SPECIFICATION are simple digital data, it is not difficult to store all the data.

However, the **compression** /decompression system in the GIF is based on the LZW system of a **dictionary** having a **maximum number of entries** of 4096. Further, among the 4096 entries, the number of empty entries or the contents of the entries (second **dictionary** ) are subjected to change during the process of decompressing the same image. Furthermore, the dictionary...

22/5,K/16 (Item 16 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00780420

**Adaptive multiple dictionary data compression**

**Adaptive Datenkompression mit mehreren Wörterbüchern**

**Compression adaptative de donnees utilisant plusieurs dictionnaires**

PATENT ASSIGNEE:

International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)

INVENTOR:

Franaszek, Peter A., 355 Crow Hill Road, Mt. Kisco, New York 10549, (US)  
Robinson, John T., 3314 N. Deerfield Avenue, Yorktown Heights, New York 10598, (US)

Thomas, Joy A., 21 Biltom Road, White Plains, New York 10607, (US)

LEGAL REPRESENTATIVE:

Rach, Werner, Dr. (76871), IBM Deutschland Informationssysteme GmbH, Patentwesen und Urheberrecht, 70548 Stuttgart, (DE)

PATENT (CC, No, Kind, Date): EP 729237 A2 960828 (Basic)

APPLICATION (CC, No, Date): EP 96101036 960125;

PRIORITY (CC, No, Date): US 393967 950224

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: H03M-007/30;

ABSTRACT EP 729237 A2

A system and method for compressing and decompressing data using a plurality of data compression mechanisms. Representative samples of each block of data are tested to select an appropriate one of the data compression mechanisms to apply to the block. The block is then compressed using the selected one of the mechanisms and the compressed block is provided with an identifier of the selected mechanism. For decompression, the identifier is examined to select an appropriate one of the data decompression mechanisms to apply to the block. The block is then decompressed using the selected one of the mechanisms. (see image in original document)

ABSTRACT WORD COUNT: 121

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 960828 A2 Published application (A1with Search Report ;A2without Search Report)

Withdrawal: 990203 A2 Date on which the European patent application was deemed to be withdrawn: 980801

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	505
SPEC A	(English)	EPAB96	4094
Total word count - document A			4599

Total word count - document B 0  
Total word count - documents A + B 4599

...SPECIFICATION be fixed to a predetermined set. For example, this set could be initially empty, and **dictionaries** generated by a **dictionary**-based **compression** method could be added to the set as subsequent blocks are **compressed**, until a **maximum number of dictionary** blocks is reached.

Furthermore, if there are currently no **compressed** blocks requiring a given **dictionary** block for de-**compression** (this can be determined by examining the CMD fields), the given **dictionary** block can be removed from the current set of dictionary blocks.

Among other possibilities, the...  
? t22/5,k/17-21,25

22/5,K/17 (Item 17 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00716993

**Data compression method and system**

**Datenkompressionsverfahren und System**

**Procede et systeme de compression des donnees**

PATENT ASSIGNEE:

SETA CO., LTD., (1936671), 3-1-25, Ariake, Koto-ku, Tokyo, (JP),  
(Proprietor designated states: all)

INVENTOR:

Watanabe, Hiroyuki, c/o Seta Co., Ltd., 35-1, Nishi-Kamata 7-chome,  
Ohta-ku, Tokyo 144, (JP)

LEGAL REPRESENTATIVE:

Prufer, Lutz H., Dipl.-Phys. et al (38295), PRUFER & PARTNER,  
Patentanwalte, Harthausen Strasse 25d, 81545 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 678986 A1 951025 (Basic)  
EP 678986 B1 000712

APPLICATION (CC, No, Date): EP 95106020 950421;

PRIORITY (CC, No, Date): JP 94107837 940422

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: H03M-007/42; G06F-005/00

CITED PATENTS (EP B): EP 573208 A; US 4558302 A; US 4814746 A; US 4876541 A  
; US 5003307 A; US 5016009 A; US 5049881 A; US 5140321 A; US 5142282 A;  
US 5150119 A; US 5175543 A; US 5243341 A; US 5253325 A; US 5254990 A

ABSTRACT EP 678986 A1

A lossless type data compression method employing a dictionary system is suitable for character generator of a game machine and so forth. A working data strings are generated from an original data stream. Two sequential working data strings are combined to form a combined string. A dictionary is generated by registering the combined strings having occurrence frequency higher than a given value with a dictionary number. The combined strings in the data stream are replaced with the dictionary numbers corresponding to the combined strings in the dictionary. (see image in original document)

ABSTRACT WORD COUNT: 94

NOTE:

Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):

Grant: 000712 B1 Granted patent

Assignee: 20000301 A1 Transfer of rights to new applicant: SETA  
CO., LTD. (1936671) 3-1-25, Ariake Koto-ku,

Tokyo JP  
Oppn None: 010627 B1 No opposition filed: 20010413  
Application: 951025 A1 Published application (A1with Search Report  
;A2without Search Report)  
Examination: 951102 A1 Date of filing of request for examination:  
950907  
Examination: 980624 A1 Date of despatch of first examination report:  
980506

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200028	774
CLAIMS B	(German)	200028	683
CLAIMS B	(French)	200028	890
SPEC B	(English)	200028	5169
Total word count - document A			0
Total word count - document B			7516
Total word count - documents A + B			7516

22/5,K/18 (Item 18 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00700315

**Apparatus and method for lempel ziv data compression with management of  
multiple dictionaries in content addressable memory**

**Vorrichtung und Verfahren fur Lempel Ziv Datenkompression mit Verwaltung  
von mehreren Worterbuchern in Assoziativspeichern**

**Dispositif et methode de compression de donnees selon lempel ziv avec  
gestion de dictionnaires multiples dans une memoire adressable par le  
contenu**

PATENT ASSIGNEE:

Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto,  
California 94304, (US), (Proprietor designated states: all)

INVENTOR:

Clark, Airell R., 3940 NW Scenic DR, Albany, OR 97321-9335, (US)  
Tobin, Jeffrey P., 539 SE 3rd, Albany, OR 97321, (US)  
Seroussi, Gadiel, 1123 Milky Way, Cupertino, California 95014, (US)

LEGAL REPRESENTATIVE:

Colgan, Stephen James et al (29461), CARPMAELS & RANSFORD 43 Bloomsbury  
Square, London WC1A 2RA, (GB)

PATENT (CC, No, Kind, Date): EP 666651 A2 950809 (Basic)  
EP 666651 A3 960522  
EP 666651 B1 000719

APPLICATION (CC, No, Date): EP 95300346 950120;

PRIORITY (CC, No, Date): US 192878 940207

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: H03M-007/30

CITED PATENTS (EP B): EP 573208 A; US 4881075 A; US 5010345 A

ABSTRACT EP 666651 A2

A class of lossless data compression algorithms use a memory-based dictionary (312) of finite size to facilitate the compression and decompression of data. To reduce the loss in data compression caused by dictionary resets, a standby dictionary (328) is used to store a subset of encoded data entries previously stored in a current dictionary. In a second aspect of the invention, data is compressed/decompressed according to the address location of data entries contained within a dictionary built in a content addressable memory (CAM) (312). In a third aspect of the invention, the minimum memory/high compression capacity



of the standby dictionary scheme is combined with the fast single-cycle per character encoding/decoding capacity of the CAM circuit. In a fourth aspect of the invention, a selective overwrite dictionary swapping technique is used to allow all data entries to be used at all times for encoding character strings (450-472). (see image in original document)

ABSTRACT WORD COUNT: 175

NOTE:

Figure number on first page: 23

LEGAL STATUS (Type, Pub Date, Kind, Text):

Grant: 000719 B1 Granted patent  
Application: 950809 A2 Published application (A1with Search Report  
;A2without Search Report)  
Oppn None: 010704 B1 No opposition filed: 20010420  
Assignee: 010328 B1 Transfer of rights to new proprietor:  
Hewlett-Packard Company, A Delaware Corporation  
(3016020) 3000 Hanover Street Palo Alto, CA  
94304 US  
Search Report: 960522 A3 Separate publication of the European or  
International search report  
Examination: 960918 A2 Date of filing of request for examination:  
960722  
Examination: 981007 A2 Date of despatch of first examination report:  
980825

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200029	672
CLAIMS B	(German)	200029	668
CLAIMS B	(French)	200029	851
SPEC B	(English)	200029	23240
Total word count - document A			0
Total word count - document B			25431
Total word count - documents A + B			25431

22/5,K/19 (Item 19 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00592645

Method and means providing static dictionary structures for compressing character data and expanding compressed data.

Verfahren und Einrichtung zum Schaffen von statischen Wörterbuchstrukturen zum Komprimieren von Textzeichendaten und Expandieren komprimierter Daten.

Methode et dispositif pour pourvoir des structures de dictionnaires statiques pour la compression de caractere de donnees et l'expansion de donnees comprimees.

PATENT ASSIGNEE:

INTERNATIONAL BUSINESS MACHINES CORPORATION, (200125), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)

INVENTOR:

Iyer, Balakrishna Raghavendra, 3049 Nashville Drive, San Jose, CA 95133, (US)

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Plambeck, Kenneth Ernest, 7 Daisy Lane, Poughkeepsie, NY 12603, (US)

Sinha, Bhaskar, 41 Anna's Way, Boxford, MA 01921, (US)

LEGAL REPRESENTATIVE:

Jost, Ottokarl, Dipl.-Ing. et al (6092), IBM Deutschland

Informationssysteme GmbH, Patentwesen und Urheberrecht, D-70548  
 Stuttgart, (DE)  
 PATENT (CC, No, Kind, Date): EP 595064 A2 940504 (Basic)  
 EP 595064 A3 950816  
 APPLICATION (CC, No, Date): EP 93115998 931004;  
 PRIORITY (CC, No, Date): US 968631 921029  
 DESIGNATED STATES: DE; FR; GB  
 INTERNATIONAL PATENT CLASS: G06F-015/401; H03M-007/30;

ABSTRACT EP 595064 A2

Significantly improves the performance of a processor executing the well-known Ziv-Lempel (ZL) data compression/expansion algorithm by providing a novel structure for ZL dictionaries, and a novel SZL (static Ziv-Lempel) process for using an SZL dictionary(s) in a static manner to compress and/or expand records randomly accessed from a data base without spending processing on modifying the dictionary. An SZL dictionary is generated by a pass over a data base (sampling some or all of the records in the data base) before the dictionary is used for compression/expansion. (This is unlike the adaptive Ziv-Lempel, AZL, dictionary in the prior art which is generated while compressing data, during which it is continuously being "adapted" (changed) by the data it is compressing.) Entries in an SZL dictionary have novel internal structures for reducing processing time, in which a single entry may include extension characters, plural child characters or sibling characters, along with information fields and unique control fields that enable compression or expansion determinations to be made without accessing other entries involved in the determinations, which enables the SZL process to have fewer memory accesses per compression symbol for faster compression and expansion operations. Compression/expansion operations are also speeded up by accessing multiple characters per operation, enabled by matching the size of each dictionary entry to the data unit size accessed from the computer memory. The novel SZL process operates most efficiently with a separate compression dictionary and a separate expansion dictionary. However, a single SZL dictionary may be constructed to provide both compression and expansion. (see image in original document) (see image in original document)

ABSTRACT WORD COUNT: 265

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 940504 A2 Published application (Alwith Search Report ;A2without Search Report)  
 Examination: 941019 A2 Date of filing of request for examination: 940819  
 Search Report: 950816 A3 Separate publication of the European or International search report  
 Change: 950816 A2 Obligatory supplementary classification (change)  
 \*Assignee: 970205 A2 Applicant (transfer of rights) (change): International Business Machines Corporation (200120) Old Orchard Road Armonk, N.Y. 10504 (US) (applicant designated states: DE;FR;GB)  
 Withdrawal: 980304 A2 Date on which the European patent application was withdrawn: 980108

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF2	2346
SPEC A	(English)	EPABF2	27628
Total word count - document A			29974
Total word count - document B			0
Total word count - documents A + B			29974

...SPECIFICATION are numbered consecutively after the features described above. The further features include:

15. Providing separate **compression** and expansion **dictionaries** instead of a single **dictionary**. This allows **optimizing** the **contents** of each **dictionary** for its respective purpose, thus achieving the best possible performance during each of **compression** and expansion. The **compression dictionary** can contain more PECs than in the single **dictionary** case. The **compression dictionary** can contain more CCs than in the single dictionary case. Since SDs are still available...

22/5,K/20 (Item 20 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00573831

Apparatus and method for managing multiple dictionaries in content addressable based data compression

Verfahren und Vorrichtung zur Verwaltung von mehreren Wörterbüchern zur Datenkomprimierung mit Inhaltsadressierung

Dispositif et methode pour gerer plusieurs dictionnaires par compression de donnees avec adressage par le contenu

PATENT ASSIGNEE:

Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto, California 94304, (US), (applicant designated states: DE;FR;GB;IT)

INVENTOR:

Lempel, Abraham, 1 Moshe Sneh St., Haifa 34987, (IL)

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Tobin, Jeffrey P., 539 SE 3rd Albany, OR 97321, (US)

Lantz, Carl B., 619 NW 15th Street, Corvallis OR 97330, (US)

LEGAL REPRESENTATIVE:

Colgan, Stephen James et al (29461), CARPMAELS & RANSFORD 43 Bloomsbury Square, London WC1A 2RA, (GB)

PATENT (CC, No, Kind, Date): EP 573208 A1 931208 (Basic)

EP 573208 B1 980422

APPLICATION (CC, No, Date): EP 93304094 930526;

PRIORITY (CC, No, Date): US 892546 920601; US 891872 920602; US 996808 921223

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: H03M-007/30;

CITED PATENTS (EP A): US 4881075 A; EP 313190 A; EP 313190 A; EP 380294 A; US 5175543 A

CITED REFERENCES (EP A):

ADVANCED RESEARCH IN VLSI. PROCEEDINGS OF THE SIXTH MIT CONFERENCE, CAMBRIDGE, 2 APRIL 1990 CAMBRIDGE, MA, USA pages 33 - 50 S. BUNTON ET AL. 'Practical Dictionary Management for Hardware Data Compression';

ABSTRACT EP 573208 A1

A class of lossless data compression algorithms use a memory-based dictionary of finite size to facilitate the compression and decompression of data. To reduce the loss in data compression caused by dictionary resets, a standby dictionary is used to store a subset of encoded data entries previously stored in a current dictionary. In a second aspect data is compressed/decompressed according to the address location of data entries contained within a dictionary built in a content addressable memory (CAM). In a third aspect the minimum memory/high compression capacity of the standby dictionary scheme is combined with the fast single-cycle per character encoding/decoding capacity of the CAM circuit. The circuit uses multiple dictionaries within the storage locations of a

CAM to reduce the amount of memory required to provide a high data  
compression ratio. (see image in original document)  
ABSTRACT WORD COUNT: 139

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 931208 A1 Published application (A1with Search Report  
;A2without Search Report)  
Examination: 940713 A1 Date of filing of request for examination:  
940512  
Examination: 960207 A1 Date of despatch of first examination report:  
951220  
Grant: 980422 B1 Granted patent  
Oppn None: 990414 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9817	769
CLAIMS B	(German)	9817	778
CLAIMS B	(French)	9817	924
SPEC B	(English)	9817	16835
Total word count - document A			0
Total word count - document B			19306
Total word count - documents A + B			19306

...SPECIFICATION 21. Line 440 is the graphical representation of the  
compression ratio for the CAM multi- **dictionary** system and line 442  
illustrates the compression ratio for a standard LZW algorithm. Lines 440  
and 442 plot **compression** ratio (original file size/ **compressed** file  
size) as a function of b, the **maximum number** of bits in the output  
codes (i.e. log2)) of the **dictionary** size).

To emphasize the advantage of the CAM/standby dictionary method, a  
dashed line 444...

22/5,K/21 (Item 21 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00544075

Dictionary reset performance enhancement for data compression applications  
Erhöhung der Leistungsfähigkeit beim Rucksetzen von Wörterbüchern für  
Datenkompressionsanwendungen

Augmentation de performance lors de l'initialisation d'un dictionnaire pour  
applications en compression de donnees

PATENT ASSIGNEE:

Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto,  
California 94304, (US), (applicant designated states: DE;FR;GB;IT)

INVENTOR:

Lantz, Carl B., 619 N.W. 15th Street, Corvallis, OR 97330, (US)

LEGAL REPRESENTATIVE:

Colgan, Stephen James et al (29461), CARPMAELS & RANSFORD 43 Bloomsbury  
Square, London WC1A 2RA, (GB)

PATENT (CC, No, Kind, Date): EP 534713 A2 930331 (Basic)  
EP 534713 A3 931110  
EP 534713 B1 980318

APPLICATION (CC, No, Date): EP 92308614 920922;

PRIORITY (CC, No, Date): US 766475 910925

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: H03M-007/30;

CITED PATENTS (EP A): WO 8912363 A; WO 8912363 A; US 4053948 A

ABSTRACT EP 534713 A2

A class of lossless data compression algorithms use a RAM-based dictionary to facilitate the compression and decompression of data. The dictionary is initialized or reset at various events, such as data file boundaries, or at specific compression ratio thresholds. The average time to perform the dictionary reset is decreased by using a dictionary reset optimizer (12) to reset the dictionary without writing the DICT VALID fields (19) of all dictionary locations (1,2,3,...L) immediately upon each reset. The DICT VALID field in static RAM (16) is set up as an N-bit field and the optimizer includes a counter (20) for generating an N-bit DICT NUMBER field (22) under control of a controller (24) responsive to reset signals. During operation to compress/decompress data after a reset, the DICT VALID field of a dictionary location is compared to the current DICT NUMBER(1). If their values are equal, the DICT ENTRY field (18) in such location is deemed valid. Otherwise, the DICT ENTRY field is rewritten with new compression data and the DICT VALID field is reset equal to the current DICT NUMBER(1). Upon each reset, the counter is incremented to provide a new DICT NUMBER(2) whose value will no longer match current DICT VALID values stored in the dictionary locations. (see image in original document)

ABSTRACT WORD COUNT: 203

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 930331 A2 Published application (A1with Search Report  
;A2without Search Report)  
Change: 930428 A2 Inventor (change)  
Search Report: 931110 A3 Separate publication of the European or  
International search report  
Examination: 940608 A2 Date of filing of request for examination:  
940414  
Examination: 960124 A2 Date of despatch of first examination report:  
951213  
Grant: 980318 B1 Granted patent  
Oppn None: 990310 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9812	1504
CLAIMS B	(German)	9812	1329
CLAIMS B	(French)	9812	2792
SPEC B	(English)	9812	2948
Total word count - document A			0
Total word count - document B			8573
Total word count - documents A + B			8573

...SPECIFICATION the matching function. In order to have an efficient hashing algorithm, the number of valid **dictionary** locations in the static RAM is much larger than the **maximum number** of valid **dictionary** entries. A factor of two to four is typical.

The data **compression** engine 7 provides the address for the **dictionary** location (1, 2, 3,...L) to be accessed,as well as the read and write...

22/5,K/25 (Item 25 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00367025

Method and apparatus for encoding, decoding and transmitting data in

compressed form.

Verfahren und Vorrichtung zur Kodierung, Dekodierung und Übertragung von Daten in komprimierter Form.

Methode et dispositif pour coder, decoder et transmettre des donnees sous forme comprimee.

PATENT ASSIGNEE:

BRITISH TELECOMMUNICATIONS public limited company, (846100), 81 Newgate Street, London EC1A 7AJ, (GB), (applicant designated states: AT;BE;CH;DE;ES;FR;GB;GR;IT;LI;LU;NL;SE)

INVENTOR:

Clark, Alan Douglas, 9 Meadowlands Kirton, Ipswich Suffolk, (GB)

LEGAL REPRESENTATIVE:

Semos, Robert Ernest Vickers et al (43051), BRITISH TELECOM Intellectual Property Unit 13th Floor 151 Gower Street, London WC1E 6BA, (GB)

PATENT (CC, No, Kind, Date): EP 350281 A1 900110 (Basic)

EP 350281 B1 930728

APPLICATION (CC, No, Date): EP 89306808 890704;

PRIORITY (CC, No, Date): GB 8815978 880705

DESIGNATED STATES: AT; BE; CH; DE; ES; FR; GB; GR; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS: H03M-007/40; G06F-015/40;

CITED PATENTS (EP A): EP 127815 A; WO 8600479 A; EP 148008 A; US 4464650 A

CITED REFERENCES (EP A):

IBM TECHNICAL DISCLOSURE BULLETIN, vol. 14, no. 11, April 1972, pages 3521-3522, New York, US; K. KOCH: "Representation of tree data structures for data manipulation and search operation"

IBM TECHNICAL DISCLOSURE BULLETIN, vol. 20, no. 8, January 1978, pages 3320-3323, New York, US; N. WINTERBOTTOM: "General purpose database structure"

IBM TECHNICAL DISCLOSURE BULLETIN, vol. 25, no. 11B, April 1983, pages 5886-5888, New York, US; R.A. CRUS et al.: "Method for deleting records from a hierarchical data base";

ABSTRACT EP 350281 A1

Data compression and decompression utilising eg the Ziv-Lempel algorithm is simplified by utilising a tree structure for the dictionary in which alternative symbols at a given position in a symbol sequence (a,b,c) are linked by linking pointers R of a first type and successive symbols (ab,bc,ca,aba,abb,abc) are linked by linking pointers D of a second type. For example the sequence ab may continue with any one of the symbols a,b and c grouped together by R pointers in a list below the final symbol of the sequence ab. Each symbol is defined by an associated pair of D and R pointers, in conjunction with a parent pointer P which identifies its parent. Symbols having no D pointers extending therefrom are pruned from the tree and transferred to a free list as shown in Figure 8(b).

ABSTRACT WORD COUNT: 139

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 900110 A1 Published application (A1with Search Report ;A2without Search Report)

Examination: 900328 A1 Date of filing of request for examination: 900130

Examination: 920129 A1 Date of despatch of first examination report: 911218

\*Assignee: 920603 A1 Applicant (transfer of rights) (change):  
BRITISH TELECOMMUNICATIONS public limited company (452971) 81 Newgate Street London EC1A 7AJ (GB) (applicant designated states: AT;BE;CH;DE;ES;FR;GB;GR;IT;LI;LU;NL;SE)

\*Assignee: 930714 A1 Applicant (transfer of rights) (change):  
BRITISH TELECOMMUNICATIONS public limited

company (846100) 81 Newgate Street London EC1A  
7AJ (GB) (applicant designated states:  
AT;BE;CH;DE;ES;FR;GB;GR;IT;LI;LU;NL;SE)

Grant: 930728 B1 Granted patent

Oppn None: 940720 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	4832
CLAIMS B	(German)	EPBBF1	3911
CLAIMS B	(French)	EPBBF1	4638
SPEC B	(English)	EPBBF1	7318
Total word count - document A			0
Total word count - document B			20699
Total word count - documents A + B			20699

...SPECIFICATION selected by the processor.

The above described embodiments employ a method of deletion which is **highly** efficient in terms of memory utilization and execution speed although it is slightly sub- **optimal** in terms of **compression** efficiency. The embodiments are formed from the two data structures used to build a **dictionary**, the systematic search tree structure used to represent strings and the systematic tabular representation of...

? t22/5,k/42,46,51,54

22/5,K/42 (Item 42 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00776464 \*\*Image available\*\*

**METHOD AND APPARATUS FOR REDUCING THE TIME REQUIRED FOR COMPRESSING DATA  
PROCEDE ET DISPOSITIF PERMETTANT D'ACCELERER LA COMPRESSION DE DONNEES**

Patent Applicant/Assignee:

UNISYS CORPORATION, Township Line and Union Meeting Roads, P.O. Box 500,  
Blue Bell, PA 19424-0001, US, US (Residence), US (Nationality)

Inventor(s):

YORK Kenneth Lindsay, 2130 Country Club Drive, Huntington Valley, PA  
19006, US

YORK Thayer Lindsay, 2130 Country Club Drive, Huntington Valley, PA 19006  
, US

Legal Representative:

STARR Mark T, Unisys Corporation, Township Line and Union Meeting Roads,  
P.O. Box 500, Blue Bell, PA 19424-0001, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200110037 A1 20010208 (WO 0110037)

Application: WO 2000US19871 20000719 (PCT/WO US0019871)

Priority Application: US 99364427 19990730

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

JP

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Main International Patent Class: H03M-007/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 8480

English Abstract

The present invention provides a novel method and system for obtaining maximum system speed performance for compressing coded data. The novel pointer address used comprises a string code portion representative of the last matched string found in the dictionary and appended thereto an extension character code portion representative of the next character taken from the input data stream. The dictionary is constructed large enough to provide a unique memory location for every possible pointer address. The unique pointer address, representative of a string of data in the input data stream, is employed as an address pointer to access the memory. If no data is in memory at the address pointer the string has not been previously observed and a new unique compression coded is stored at the pointer address in memory for the string so that the next identical pointer address will read the code for the string from the dictionary.

#### French Abstract

Cette invention concerne un procede et un systeme permettant de maximiser la vitesse de compression de donnees codees. Selon cette invention, l'adresse de pointeur utilisee comprend une partie code de chaine representative de la derniere chaine correspondante localisee dans le dictionnaire et accrochee a une partie rallonge de code de caractere representative du caractere suivant pris dans le train de donnees d'entree. De par sa conception, ce dictionnaire est suffisamment important pour qu'un emplacement de memoire unique soit disponible pour chaque adresse de pointeur possible. Cette adresse de pointeur unique, qui est representative d'une chaine de donnees dans le flux de donnees d'entree, sert d'adresse de pointeur pour acceder a la memoire. Si aucune donnee ne se trouve dans la memoire au niveau du pointeur d'adresse, c'est que la chaine n'a pas ete observee precedemment. Une nouvelle compression unique codee est stockee dans la memoire au niveau de l'adresse de pointeur pour cette chaine de sorte que la prochaine adresse de pointeur identique lira le code dans le dictionnaire pour ladite chaine.

#### Legal Status (Type, Date, Text)

Publication 20010208 A1 With international search report.

Examination 20010719 Request for preliminary examination prior to end of 19th month from priority date

#### Fulltext Availability:

Detailed Description

#### Detailed Description

... 65r000 of the possible 22 4addresses are filled, it is now possible to configure a **dictionary** of the type shown in Figure 8 to **optimize** the **number** of code **compression** bits between 9 and 16. Once the **dictionary** is filled with a **maximum number** of codes allowed by the number of code bits selected the data **compression** system transmits a reset code to the decoder or receiver

22/5,K/46 (Item 46 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00450505 \*\*Image available\*\*

**TEXT FILE COMPRESSION SYSTEM**

**SYSTEME DE COMPRESSION DE FICHIERS TEXTE**

Patent Applicant/Assignee:

J STREAM INC,

Inventor(s):



CRANDALL Gary E,  
Patent and Priority Information (Country, Number, Date):  
Patent: WO 9840969 A2 19980917  
Application: WO 98US5134 19980316 (PCT/WO US9805134)  
Priority Application: US 97818765 19970314  
Designated States:  
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)  
AU CA JP AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
Main International Patent Class: H03M-007/30  
Publication Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 11652

#### English Abstract

The system creates an alphabetically ordered main dictionary listing all unique words appearing in the text file. A text file (16) "word" is defined as a sequence of characters ending with one or more "word terminators" such as spaces, commas, periods and carriage returns. The compression system also creates a common word dictionary (22) referencing words most often encountered in the text file. The sequence of words forming the text file is represented by a word index, a list of one byte and two byte references to common and main dictionary words, respectively. The system compresses the main dictionary (26) of each dictionary word matching leading characters of a next preceding dictionary word are represented by data indicating the number of matching characters. Second, commonly encountered dictionary word suffixes are represented by data referencing entries of a small suffix dictionary (30). Third, remaining characters of main dictionary words are represented by bytes encoded to represent commonly encountered characters and groups of characters.

#### French Abstract

L'invention concerne un systeme servant a comprimer un fichier texte ASCII ou un fichier texte code de facon similaire. Le systeme permet de creer un dictionnaire principal classe par ordre alphabetique repertoriant tous les mots particuliers apparaissant dans le fichier texte. Un fichier texte "mot" est defini comme etant une sequence de caracteres se terminant par une ou plusieurs "terminaisons de mot", tels des espaces, des virgules, des points et des retours a la ligne. Le systeme de compression permet aussi de creer un dictionnaire de mots courants renvoyant a des mots apparaissant le plus frequemment dans le fichier texte. La sequence de mots formant le fichier texte est representee par un index de mots, une liste de renvois d'un ou de deux octets a des mots du dictionnaire principal ou du dictionnaire de mots courants, respectivement. Le systeme comprime le dictionnaire principal au moyen de trois techniques complementaires. Premierement, des caracteres de tete de chaque mot de dictionnaire correspondant a des caracteres de tete d'un mot suivant du dictionnaire precedent sont representes par des donnees indiquant le nombre de caracteres correspondants. Deuxiemement, des suffixes de mots de dictionnaire apparaissant regulierement sont representes par des donnees renvoyant a des entrees d'un petit dictionnaire de suffixes. Troisiemement, des caracteres restants de mots de dictionnaire principal sont representes par des octets codes pour représenter des caracteres et des groupes de caracteres apparaissant regulierement. Le systeme comprime egalement des structures de donnees de style souvent incluses dans des fichiers texte de traitements de texte.

Fulltext Availability:  
Detailed Description

#### Detailed Description

... the uncompressed dictionary the system creates a corresponding, usually much smaller, entry of the compressed **dictionary**. The system employs three compression techniques, described below, which cooperate to produce a relatively high **dictionary compression ratio**.

#### Leading Character Compression

As mentioned above, the main **dictionary** entries are entered in alphabetical order to **maximize** the **number** of matching leading characters. The first **dictionary compression** technique makes use of the fact that since the main **dictionary** is alphabetized, the first 1 to 15 characters of each word entry are likely to...

22/5,K/51 (Item 51 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00167395

#### METHOD AND APPARATUS FOR ENCODING, DECODING AND TRANSMITTING DATA IN COMPRESSED FORM

#### PROCEDE ET APPAREIL POUR ENCODER, DECODER ET TRANSMETTRE DES DONNEES SOUS FORME CONDENSEE

Patent Applicant/Assignee:

BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY,  
CLARK Alan Douglas,

Inventor(s):

CLARK Alan Douglas,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9000837 A1 19900125

Application: WO 89GB752 19890704 (PCT/WO GB8900752)

Priority Application: GB 8815978 19880705

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AU JP US

Main International Patent Class: H03M-007/40

International Patent Class: G06F-15:40

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 10338

#### English Abstract

Data compression and decompression utilising e.g. the Ziv-Lempel algorithm is simplified by utilising a tree structure for the dictionary in which alternative symbols at a given position in a symbol sequence (a, b, c) are linked by linking pointers R of a first type and successive symbols (ab, bc, ca, aba, abb, abc) are linked by linking pointers D of a second type. For example the sequence ab may continue with any one of the symbols a, b and c grouped together by R pointers in a list below the final symbol of the sequence ab. Each symbol is defined by an associated pair of D and R pointers, in conjunction with a parent pointer P which identifies its parent. Symbols having no D pointers extending therefrom

are pruned from the tree and transferred to a free list as shown in Figure (8b).

#### French Abstract

La compression et la decompression de donnees au moyen par exemple de l'algorithme de Ziv-Lempel est simplifiee par l'emploi, pour le dictionnaire, d'une structure arborescente dans laquelle des variantes de symbole, a un emplacement donne dans une sequence de symboles (a, b, c), sont lies par des indicateurs de liaison R d'un premier type, et des symboles successifs (ab, bc, ca, aba, abb, abc) sont lies par des indicateurs de liaison D d'un second type. La sequence ab peut par exemple se poursuivre avec n'importe lequel des symboles a, b et c regroupees par des indicateurs R dans une liste au-dessous du symbole final de la sequence ab. Chaque symbole est defini par une paire associee d'indicateurs D et R, conjointement avec un indicateur pere P qui identifie sa parente. Les symboles d'ou ne partent pas d'indicateurs D sont elagues de la structure arborescente et transferees sur une liste libre comme le montre la figure (8b).

#### Fulltext Availability:

Detailed Description

#### Detailed Description

... highly efficient in terms of memory utilization and execution speed although it is slightly sub- **optimal** in terms of **compression** efficiency. The embodiments are formed from the two data structures used to build a **dictionary**, the systematic search tree structure used to represent strings and the systematic tabular representation of...

22/5,K/54 (Item 54 from file: 324)

DIALOG(R)File 324:German Patents Fulltext

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0003706777 \*\*Image available\*\*

Datenkomprimierungs - and data decompression scheme under application of a search tree, with which each entry is stored with a sign chain of infinite length,

Datenkomprimierungs- und Datendekomprimierungsschema unter Verwendung eines Suchbaums, bei dem jeder Eintrag mit einer Zeichenkette unendlicher Länge gespeichert ist

Patent Applicant/Assignee:

Kyocera Corp, Kyoto, JP

Inventor(s):

Hayashi Takaaki, Yokohama, Kanagawa, JP

Patent and Priority Information (Country, Number, Date):

Patent: DE 19622045 C2 20010215

Application: DE 19622045 19960531

Priority Application: JP 96105506 19960425; JP 95253433 19950929 (JP 10550696; JP 25343395)

Main International Patent Class: H03M-007/30

International Patent Class: H03M-007/42; H03M-007/48

Main European Patent Class: H03M-007/30Z2

European Patent Class: G06T-009/00S

Publication Language: German

Fulltext Availability:

Description (English machine translation)

Claims (English machine translation)

Description (German)

Claims (German)

Fulltext Word Count (English): 9143

Fulltext Word Count (German) : 7678

Fulltext Word Count (Both) : 16821

Abstract (English machine translation)

Data compression appliance. extensive: a data storage (104). 204, to storing of complaint data. a code storage (105). 205, to storing from through the compression of complaint data of gotten codes. a lexicon (100) with a multiplicity of entries. in which can a first pointer (301) be stored in each case. the one at will tall sign string of the complaint data stored in the data storage shows. with what does the lexicon be expressed through a search tree. the one main knots (302). 305, to storing the first pointer (301) and a turn-off knot (303). 306, to representing a turn-off at the search tree includes. a search equipment (101) for the sign chain with the longest agreement about seeking a sign chain with the longest agreement. this with one over a longest length to coding sign chain agrees. under the sign chains stated through the respective first pointers (301). with what is the longest length the longest accordance length. a Codiereinrichtung (102) to coding the longest accordance length and an index of an entry. he/it a first pointer (301) stores. this the sign chain with the longest agreement boasts. and to the letter of a code yielding itself into the code storage (105). 205. and a lexicon updating equipment (103) for adding an entry to the lexicon. this him/it the encoded sign chain of boasting first pointers (301) stores. with what does the lexicon (100) allow the registration of the entries without limitation of their lengths through storages of the first pointers (301) in the respective entries. one through what in the data storage (104). 204, stored sign chain found with an arbitrary length and can be coded. in that an index of an entry and the longest accordance length are marked.

Abstract (German)

Datenkomprimierungsvorrichtung. umfassend: einen Datenspeicher (104. 204) zum Speichern von Eingabedaten. einen Codespeicher (105. 205) zum Speichern von durch die Komprimierung von Eingabedaten erhaltenen Codes. ein Lexikon (100) mit einer Vielzahl von Einträgen. in welchen jeweils ein erster Zeiger (301) gespeichert werden kann. der eine beliebig lange Zeichenkette der in dem Datenspeicher gespeicherten Eingabedaten anzeigt. wobei das Lexikon durch einen Suchbaum ausgedrückt ist. der einen Hauptknoten (302. 305) zum Speichern des ersten Zeigers (301) und einen Abzweigungsknoten (303. 306) zum Darstellen einer Abzweigung bei dem Suchbaum umfasst. eine Sucheinrichtung (101) für die Zeichenkette mit der langsten Übereinstimmung zum Suchen einer Zeichenkette mit der langsten Übereinstimmung. die mit einer über eine langste Länge zu codierenden Zeichenkette übereinstimmt. unter den durch die jeweiligen ersten Zeiger (301) angegebenen Zeichenketten. wobei die langste Länge die langste Übereinstimmungslänge ist. eine Codiereinrichtung (102) zum Codieren der langsten Übereinstimmungslänge und eines Indexes eines Eintrags. der einen ersten Zeiger (301) speichert. der die Zeichenkette mit der langsten Übereinstimmung angibt. und zum Schreiben eines sich ergebenden Codes in den Codespeicher (105. 205). und eine Lexikon-Aktualisierungseinrichtung (103) zum Hinzufügen eines Eintrags zu dem Lexikon. der den die codierte Zeichenkette angegebenden ersten Zeiger (301) speichert. wobei das Lexikon (100) die Registrierung der Einträge ohne Beschränkung von deren Längen durch Speichern der ersten Zeiger (301) in den jeweiligen Einträgen gestattet. wodurch eine in dem Datenspeicher (104. 204) gespeicherte Zeichenkette mit einer willkürlichen Länge gefunden und codiert werden kann. indem ein Index eines Eintrags und die langste Übereinstimmungslänge bezeichnet werden.

Fulltext Availability:

Description (English machine translation)

Description (English machine translation)

... the knots of a search tree (d. h. the number of the entries of the **lexicon** 100) should be restricted to the prominent way.

The **maximum number** of the entries is determined by a compromise between the storage costs and the **compression** relationship. D. h. if the **maximum number** of the entries is increased, the **compression** relationship is improved on the basis of an increase of the number of the sign...

...1000, it is judged whether the number of he/it reached 200 registered entries a **maximum number** of the entries in the conversion table, that in same way as for this in the **compression** proceeding would use **lexicon** is put in.

If a judgment result of step 1000 boasts, that the conversion table...

?

32/5,K/2 (Item 2 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01503730

Method and apparatus for data compression of network packets employing  
per-packet hash tables

Verfahren und Vorrichtung zur Datenkomprimierung von Netzwerkdatenpaketen  
unter Verwendung von paketweisen Hash Tabellen

Methode et dispositif de compression des paquets de donnees dans un reseau  
utilisant des tables de hash a base de paquets

PATENT ASSIGNEE:

LUCENT TECHNOLOGIES INC., (2143720), 600 Mountain Avenue, Murray Hill,  
New Jersey 07974-0636, (US), (Applicant designated States: all)

INVENTOR:

Dorward, Sean Matthew, 3 Waldron drive, Martinsville, New Jersey 06036,  
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Quinlan, Sean, 903 Park Avenue, Hoboken, New Jersey 07030, (US)

LEGAL REPRESENTATIVE:

Watts, Christopher Malcolm Kelway, Dr. et al (37393), Lucent Technologies  
NS UK Ltd 5 Mornington Road, Woodford Green Essex, IG8 0TU, (GB)

PATENT (CC, No, Kind, Date): EP 1258998 A2 021120 (Basic)

EP 1258998 A3 050309

APPLICATION (CC, No, Date): EP 2002015108 001023;

PRIORITY (CC, No, Date): US 526844 000316

DESIGNATED STATES: DE; FR; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

RELATED PARENT NUMBER(S) - PN (AN):

EP 1134901 (EP 2000309338)

INTERNATIONAL PATENT CLASS: H03M-007/30

ABSTRACT EP 1258998 A2

A method and apparatus for compressing packets that enables  
inter-packet compression thereby achieving greater robustness and  
increased compression ratios. More particularly, a variable-length coding  
is used in conjunction with maintaining a separate hash table for each  
packet. Further, the per-packet hash table indexes particular byte  
strings in the packet but does not index data in any other packet(s).  
That is, a respective separate hash table for each packet is employed  
wherein such hash table is constructed as the particular packet is  
compressed. As such, the respective hash table is encoded with the  
particular packet. Employing a per-packet hash table in combination with  
variable history state inter-packet compression provides for efficient  
and robust overall compression of the packets.

ABSTRACT WORD COUNT: 118

NOTE:

Figure number on first page: 2

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 021120 A2 Published application without search report

Examination: 021120 A2 Date of request for examination: 20020715

Search Report: 050309 A3 Separate publication of the search report

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200247	358
SPEC A	(English)	200247	6590
Total word count - document A			6948
Total word count - document B			0
Total word count - documents A + B			6948

INTERNATIONAL PATENT CLASS: H03M-007/30

...SPECIFICATION embodiment also maintain singly linked offset chains terminated by an invalid entry, and recycle hash **tables** by changing the valid offset range for the hash **table** (not by clearing the entire **table**). Further, as will be appreciated, a **compression** level parameter. e.g., 8 strings, is utilized to determine the **maximum number** of strings that are checked while **searching** for a **match**.

Advantageously, in accordance with an aspect of the invention, increased robustness and greater compression ratios...embodiment also maintain singly linked offset chains terminated by an invalid entry, and recycle hash **tables** by changing the valid offset range for the hash **table** (not by clearing the entire **table**). Further, as will be appreciated, a **compression** level parameter. e.g., 8 strings, is utilized to determine the **maximum number** of strings that are checked while **searching** for a **match**. As will be appreciated, the **compression** level parameter is an indicator for determining the overall computation level used during compression, the...

32/5,K/4 (Item 4 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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01328756

Method and apparatus for data compression of network packets employing per-packet hash tables

Verfahren und Vorrichtung zur Datenkomprimierung von Netzwerkdatenpaketen unter Verwendung von paketweisen Hash Tabellen

Methode et dispositif de compression des paquets de donnees dans un reseau utilisant des tables de hash a base de paquets

PATENT ASSIGNEE:

LUCENT TECHNOLOGIES INC., (2143720), 600 Mountain Avenue, Murray Hill, New Jersey 07974-0636, (US), (Proprietor designated states: all)

INVENTOR:

Dorward, Sean Matthew, 3 Waldron Drive, Martinsville, New Jersey 06036, (US)

Quinlan, Sean, 903 Park Avenue No. 1, Hoboken, New Jersey 07030, (US)

LEGAL REPRESENTATIVE:

Watts, Christopher Malcolm Kelway, Dr. et al (37391), Lucent Technologies (UK) Ltd, 5 Mornington Road, Woodford Green Essex, IG8 0TU, (GB)

PATENT (CC, No, Kind, Date): EP 1134901 A1 010919 (Basic)

EP 1134901 B1 021204

APPLICATION (CC, No, Date): EP 2000309338 001023;

PRIORITY (CC, No, Date): US 526844 000316

DESIGNATED STATES: DE; FR; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

RELATED DIVISIONAL NUMBER(S) - PN (AN):

EP 1258998 (EP 2002015108)

INTERNATIONAL PATENT CLASS: H03M-007/30

CITED PATENTS (EP B): EP 643491 A; WO 95/19662 A; WO 99/44292 A; US 4730348 A; US 5831558 A; US 6021198 A

ABSTRACT EP 1134901 A1

A method and apparatus for compressing packets that enables inter-packet compression thereby achieving greater robustness and increased compression ratios. More particularly, a variable-length coding is used in conjunction with maintaining a separate hash table for each packet. Further, the per-packet hash table indexes particular byte

strings in the packet but does not index data in any other packet(s). That is, a respective separate hash table for each packet is employed wherein such hash table is constructed as the particular packet is compressed. As such, the respective hash table is encoded with the particular packet. Employing a per-packet hash table in combination with variable history state inter-packet compression provides for efficient and robust overall compression of the packets.

ABSTRACT WORD COUNT: 118

NOTE:

Figure number on first page: 2

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 010919 A1 Published application with search report  
Examination: 010919 A1 Date of request for examination: 20001106  
Examination: 011128 A1 Date of dispatch of the first examination  
report: 20011015  
Change: 020828 A1 Application number of divisional application  
(Article 76) changed: 20020710  
Grant: 021204 B1 Granted patent  
Oppn None: 031126 B1 No opposition filed: 20030905

LANGUAGE (Publication, Procedural, Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200138	1139
CLAIMS B	(English)	200249	606
CLAIMS B	(German)	200249	527
CLAIMS B	(French)	200249	670
SPEC A	(English)	200138	6516
SPEC B	(English)	200249	6608
Total word count - document A			7656
Total word count - document B			8411
Total word count - documents A + B			16067

INTERNATIONAL PATENT CLASS: H03M-007/30

...SPECIFICATION embodiment also maintain singly linked offset chains terminated by an invalid entry, and recycle hash **tables** by changing the valid offset range for the hash **table** (not by clearing the entire **table**). Further, as will appreciated, a **compression** level parameter. e.g., 8 strings, is utilized to determine the **maximum number** of strings that are checked while **searching** for a **match**.

Advantageously, in accordance with an aspect of the invention, increased robustness and greater compression ratios...embodiment also maintain singly linked offset chains terminated by an invalid entry, and recycle hash **tables** by changing the valid offset range for the hash **table** (not by clearing the entire **table**). Further, as will appreciated, a **compression** level parameter. e.g., 8 strings, is utilized to determine the **maximum number** of strings that are checked while **searching** for a **match**. As will be appreciated, the **compression** level parameter is an indicator for determining the overall computation level used during compression, the...

...SPECIFICATION embodiment also maintain singly linked offset chains terminated by an invalid entry, and recycle hash **tables** by changing the valid offset range for the hash **table** (not by clearing the entire **table**). Further, as will appreciated, a **compression** level parameter. e.g., 8 strings, is utilized to determine the **maximum number** of strings that are checked while **searching** for a **match**.

Advantageously, in accordance with an aspect of the invention, increased robustness and greater compression ratios...embodiment also



maintain singly linked offset chains terminated by an invalid entry, and recycle hash **tables** by changing the valid offset range for the hash **table** (not by clearing the entire **table**). Further, as will be appreciated, a **compression** level parameter. e.g., 8 strings, is utilized to determine the **maximum number** of strings that are checked while **searching** for a **match**. As will be appreciated, the **compression** level parameter is an indicator for determining the overall computation level used during compression, the...

...CLAIMS The method of claim 10 further comprising

- identifying a particular one of byte substrings by **searching** each respective hash **table** of the packets, the searching being performed as a function of the respective packet history state of the packet.
12. The method of claim 11 wherein a **maximum number** of **searches** made during the **searching** of the respective hash **tables** is determined using a **compression** level parameter.
  13. The method of claim 12 wherein the compression level parameter is defined...

...series of byte substrings such that particular ones of the byte substrings are identified by **searching** the respective hash **tables** of ...packet history state associated with the packet.

21. The apparatus of claim 20 wherein a **maximum number** of **searches** performed during the **searching** is established using a **compression** level parameter.
22. The apparatus of claim 21 wherein the communications channel is part of...

...CLAIMS series of byte substrings such that particular ones of the byte substrings are identified by **searching** the respective hash **tables** of the packets, the searching being performed as a function of the respective packet history state associated with the packet.

14. The apparatus of claim 13 wherein a **maximum number** of **searches** performed during the **searching** is established using a **compression** level parameter.
15. The apparatus of claim 14 wherein the communications channel is part of...

32/5,K/23 (Item 23 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00565331 \*\*Image available\*\*

**ROUTERS AND METHODS FOR OPTIMAL ROUTING TABLE COMPRESSION**  
**ROUTEURS ET PROCEDE DE COMPRESSION OPTIMALE DE TABLE DE ROUTAGE**

Patent Applicant/Assignee:

MICROSOFT CORPORATION,

Inventor(s):

DRAVES Richard P,  
KING Christopher S,  
VENKATACHARY Srinivasan,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200028704 A1 20000518 (WO 0028704)  
Application: WO 99US19995 19990831 (PCT/WO US9919995)  
Priority Application: US 98188014 19981106

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE  
GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK  
MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU  
ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH  
CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW  
ML MR NE SN TD TG

Main International Patent Class: H04L-012/56

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 7324

#### English Abstract

A method for compressing a routing table involves constructing a binary tree representation of the routing table. The compression method makes three passes through the tree. In a first pass, the compression method propagates routing information down to the tree leaves. During this pass, the program assigns every leaf node in the tree an associated next hop or an inherited next hop from a higher level ancestral node. In a second pass, the compression method migrates prevalent next hops up the tree. This bottom up pass involves forming a set of next hops at a parent node by supernetting the sets of next hops A and B for a pair of child nodes corresponding to the parent node, according to the following operation:  $i(A*B = A) \cup i(B, \text{ if } A) \cap i(B = )\phi$  and  $i(A) \cap i(B, \text{ if } A) \cap i(B) \neq \phi$  where  $A*B$  is a set of next hops formed at the parent node. In the third pass, the compression method eliminates redundant branches in the tree. This top down pass begins at a parent node and selects a next hop from a parent node. The method then examines a child node branching from the parent node to determine whether the selected next hop is an element of next hops for the child node. If it is, the method eliminates the next hops for the child node. After the tree is restructured by the three-pass process, the compression method converts it back to a new routing table.

#### French Abstract

Cette invention concerne un procede de compression d'une table de routage qui consiste a construire une representation en arbre binaire de la table de routage. Le procede de compression consiste a effectuer trois passages a travers l'arbre. Lors du premier passage, le procede de compression permet de propager des informations de routage vers le bas en direction des feuilles de l'arbre. Lors de ce passage, le programme attribue a chaque noeud de feuille de l'arbre un saut suivant associe ou un saut suivant herite d'un noeud ancestral d'un niveau plus eleve. Lors du deuxieme passage, le procede de compression permet de faire migrer les sauts suivants prevalants vers le haut de l'arbre. Ce passage du bas vers le haut consiste a former un ensemble de sauts suivants au niveau d'un noeud parent en surreseautant les ensembles de sauts suivants A et B pour deux noeuds de descendance correspondant au noeud parent, ceci selon l'operation  $i(A*B=A) \cup i(B \text{ si } A) \cap i(B)=\phi$  et  $i(A) \cap i(B \text{ si } A) \cap i(B) \neq \phi$ , etant entendu que  $A*B$  represente un ensemble de sauts suivants forme au niveau du noeud parent. Lors du troisieme passage, le procede de compression permet d'eliminer les branches redondantes de l'arbre. Ce passage du haut vers le bas debute au niveau d'un noeud parent et permet de choisir un saut suivant depuis un noeud parent. Le procede consiste ensuite a examiner un embranchement de noeud de descendance depuis le noeud parent afin de determiner si le saut suivant choisi est un element des sauts suivants pour le noeud de descendance. Si tel est le cas, le procede permet d'eliminer les sauts suivants pour le noeud de descendance. Une fois l'arbre restructure par le traitement en trois passages, le procede

de compression consiste a le transformer a nouveau en une nouvelle table de routage.

Fulltext Availability:  
Detailed Description

Detailed Description

... root and the less prevalent next hops down toward the leaves, while concurrently pruning the **maximum number** of routes from the tree. The **compression** process, given a routing **table** that provides forwarding information for IP addresses using longest prefix **match**, provides a routing **table** which (a) provides the same forwarding information and (b) has the least possible number of...  
? t32/5,k/27

32/5,K/27 (Item 27 from file: 324)  
DIALOG(R)File 324:German Patents Fulltext  
(c) 2005 Univention. All rights reserved.

0003322425 \*\*Image available\*\*  
Data compression-and data decompression pattern using a search tree, with which each entry with a character string of infinite length is stored  
Datenkomprimierungs- und Datendekomprimierungsschema unter Verwendung eines Suchbaums, bei dem jeder Eintrag mit einer Zeichenkette unendlicher Länge gespeichert ist

Patent Applicant/Assignee:

Kyocera Corp, Kyoto, JP

Inventor(s):

Hayashi Takaaki, Yokohama, Kanagawa, JP

Patent and Priority Information (Country, Number, Date):

Patent: DE 19622045 A1 19970403

Application: DE 19622045 19960531

Priority Application: JP 96105506 19960425; JP 95253433 19950929 (JP 10550696; JP 25343395)

Main International Patent Class: H03M-007/30

International Patent Class: H03M-007/42 ; H03M-007/48

Main European Patent Class: H03M-007/30Z2

European Patent Class: G06T-009/00S

Publication Language: German

Fulltext Availability:

Description (English machine translation)

Claims (English machine translation)

Description (German)

Claims (German)

Fulltext Word Count (English): 8776

Fulltext Word Count (German) : 7550

Fulltext Word Count (Both) : 16326

Abstract (English machine translation)

An encyclopedia (100) exhibits a large number of entries in each case for storing a pointer, which indicates the head of one in a data memory (104, 204) to stored character string of input data. Under the character strings indicated by the respective pointers for a character string with the longest agreement, which with one over a longest length (i.e. a longest agreement length) character string which can be coded agrees, one searches. The longest agreement length and an index of an entry, which stores a pointer, which indicates the head of the character string as the longest agreement, coded, and an entering code written into a code memory (105, 205). An entry, which stores the pointer, which indicates the head

of the coded character string, the encyclopedia (100) added, in order to update it.

Abstract (German)

Ein Lexikon (100) weist eine Vielzahl von Einträgen jeweils zum Speichern eines Zeigers auf, der den Kopf einer in einem Datenspeicher (104, 204) gespeicherten Zeichenkette von Eingabedaten angibt. Unter den durch die jeweiligen Zeiger angegebenen Zeichenketten wird nach einer Zeichenkette mit der langsten Übereinstimmung, die mit einer über eine langste Länge (d. h. einer langsten Übereinstimmungslänge) zu codierenden Zeichenkette übereinstimmt, gesucht. Die langste Übereinstimmungslänge und ein Index eines Eintrags, der einen Zeiger speichert, der den Kopf der Zeichenkette mit der langsten Übereinstimmung angibt, werden codiert, und ein sich eingebender Code wird in einen Codespeicher (105, 205) geschrieben. Ein Eintrag, der den Zeiger speichert, der den Kopf der codierten Zeichenkette angibt, wird dem Lexikon (100) hinzugefügt, um es zu aktualisieren.

Main International Patent Class: H03M-007/30

International Patent Class: H03M-007/42 ...

... H03M-007/48

Fulltext Availability:

Description (English machine translation)

Description (English machine translation)

... compressed code remains, with the next procedure one begins.

Fig. 10 shows details by conversion **tables** actualization installation 203 of accomplished procedure. In step 1000 it is judged whether the number of the entries registered in the conversion **table** 200 achieved a **maximum number** of the entries, which is stopped to same way as for the encyclopedia used in the **compression** procedure.

If an evaluation result of step indicates 1000 the fact that the conversion **table** 200 has still place, in order to raise a new entry, goes the procedure for...

?

File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)  
(c) 2005 JPO & JAPIO  
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200535  
(c) 2005 Thomson Derwent  
File 344:Chinese Patents Abs Aug 1985-2005/May  
(c) 2005 European Patent Office  
File 371:French Patents 1961-2002/BOPI 200209  
(c) 2002 INPI. All rts. reserv.

Set	Items	Description
S1	648635	MAXIMUM OR MAXIMIS? OR MAXIMIZ? OR GREATEST OR LARGEST OR - HIGHEST OR OPTIMAL? OR OPTIMUM? OR OPTIMIS? OR OPTIMIZ?
S2	17478	S1(2W) (ENTRY? OR ENTRIES OR POPULAT? OR CONTENT? ? OR NUMB- ER? ? OR QUANTITY? OR QUANTITIES OR NUMERIC?? ?)
S3	2867	S1(2W) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TERMS OR TEMINOLOGY OR UNIT OR UNITS OR ITEM OR ITEMS)
S4	210	NGRAM? ? OR BIGRAM? ? OR (BI OR N) ()GRAM? ?
S5	1221720	COMPRESS? OR COMPACT? OR PACK? ? OR PACKING OR PACKED
S6	3272904	LENGTH? OR SIZE? ? OR DIMENSION? ? OR VOLUME? ? OR PROPORT- ION? ? OR SPACE OR SPATIAL
S7	290411	S6(2N) (MINIMI? OR SHORT?? ? OR SHORTEN? OR CONDENS??? ? OR CONDENSAT? OR REDUC????? ? OR RED? ? OR DIMIN? OR DECREAS? OR DECREM? OR ABBREVIAT?)
S8	11288	S6(2N) (KEY? ? OR STRING? ? OR WORD?? ? OR CHARACTERSTRING? - OR SUBSTRING? OR LEXEME? OR MORPHEME? OR TERM OR TERMS)
S9	25054	LEXIC??? ? OR VOCABULAR? OR DICTIONAR?
S10	800909	CACHE? ? OR CONTAINER? OR RECEPTACLE? OR DATABASE? OR DATA- SET? OR DATABANK? OR DATASTORE? OR DATAFILE? OR DATACOLLECTIO- N?
S11	3	DATALIBRAR? OR DATADEPOSIT? OR DATAREPOSIT? OR DATAWAREHOU- S?
S12	162847	DATA() (BASE? ? OR SET? ? OR BANK? ? OR STORE? ? OR STOREHO- USE? OR FILE? ? OR COLLECTION? ? OR LIBRAR? OR DEPOSIT? OR RE- POSIT? OR WAREHOU? OR WARE()HOUSE?)
S13	2327	S10:S12(3N) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TER- MS)
S14	583767	TABLE OR TABLES OR TABULAR? OR ARRAY? ? OR HASHTABLE?
S15	2341123	SEARCH? OR RETRIEV? OR FETCH? OR MATCH? OR COMPAR??? ? OR - COMPARISON? OR COMPARAT? OR EXTRACT? OR QUERY? OR QUERIE? ?
S16	1369	S2:S3 AND (S4:S5 OR S7)
S17	22	S16 AND S8
S18	12	S16 AND S9
S19	1	S16 AND S13
S20	110	S16 AND S14
S21	27	S20 AND S15
S22	76720	IC='G06F-017/30':IC='G06F-017/39'
S23	27291	IC='H03M-007/30':IC='H03M-007/48'
S24	976	MC=W01-A02A
S25	9087	MC=U21-A05A2
S26	12	S20 AND S22:S25
S27	68	S17:S19 OR S21 OR S26
S28	68	IDPAT (sorted in duplicate/non-duplicate order)
S29	68	IDPAT (primary/non-duplicate records only)

? t29/9/20

29/9/20 (Item 20 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012448055 \*\*Image available\*\*  
WPI Acc No: 1999-254163/199921  
XRPX Acc No: N99-189246

Data compression apparatus for textual database management system

Patent Assignee: UNISYS CORP (BURS )

Inventor: COOPER A B; MAIMONE W D

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5893102	A	19990406	US 96761252	A	19961206	199921 B

Priority Applications (No Type Date): US 96761252 A 19961206

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5893102	A	25	G06F-017/30	

Abstract (Basic): US 5893102 A

NOVELTY - A linked tree structure consisting of list of word phrase reference with respect to each word is stored in a **dictionary database** . The input **word** is compared with stored word list and maximum correspondence is judged. The judged word is added to list and the words are converted to **compressed** phrase codes by LZW procedure.

DETAILED DESCRIPTION - An extended phrase is obtained by adding each **maximum** correspondence judged **words** and is stored. A **compression** phrase code is assigned to each phrase based on which **compression** is carried out. Each node of link tree structure represents words with root and child nodes. A parent pointer and child pointer are provided in each node, to represent the words correspondence. An INDEPENDENT CLAIM is included for data **compression** method.

USE - For textual database management system in telephone company.

ADVANTAGE - The query searching time is reduced as the phrase is formed in search tree before starting of actual **compression** . Ensures effective **compression** of the textual data by using **dictionary** based **compression** , thereby **reduces** storage **space** . The retrieval speed of textual data is increased as the phrases are utilized in the **dictionary** .

DESCRIPTION OF DRAWING(S) - The figure shows block diagram of textual database system with **compression** apparatus.

pp; 25 DwgNo 1A,1B/9

Title Terms: DATA; **COMPRESS** ; APPARATUS; TEXT; DATABASE; MANAGEMENT; SYSTEM

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

Manual Codes (EPI/S-X): T01-D02; T01-J05B2B; T01-J05B4M; T01-J05B4P

?

PLEASE ENTER A COMMAND OR BE LOGGED OFF IN 5 MINUTES

? t29/9/26

29/9/26 (Item 26 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2005 Thomson Derwent. All rts. reserv.

010459090      \*\*Image available\*\*

WPI Acc No: 1995-360409/199547

XRPX Acc No: N95-267938

**Lossless type data compression using dictionary system - generates from original data stream working data streams, combining two sequential working data stream, generating dictionary by registering combined strings with occurrence frequency higher than value with dictionary number**

Patent Assignee: SETA CO LTD (SETA-N); SETA KK (SETA-N)

Inventor: WATANABE H

Number of Countries: 005    Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 678986	A1	19951025	EP 95106020	A	19950421	199547    B
JP 7295785	A	19951110	JP 94107837	A	19940422	199603
US 5604495	A	19970218	US 95426620	A	19950421	199713
EP 678986	B1	20000712	EP 95106020	A	19950421	200036
DE 695120852	E	20000817	DE 95617852	A	19950421	200047
			EP 95106020	A	19950421	
JP 3522331	B2	20040426	JP 94107837	A	19940422	200428

Priority Applications (No Type Date): JP 94107837 A 19940422

Cited Patents: EP 573208; US 4558302; US 4814746; US 4876541; US 5003307; US 5016009; US 5049881; US 5140321; US 5142282; US 5150119; US 5175543; US 5243341; US 5253325; US 5254990

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 678986	A1	E	19	H03M-007/42	
				Designated States (Regional):	DE FR GB
JP 7295785	A		1	G06F-005/00	
US 5604495	A		17	H03M-007/00	
EP 678986	B1	E		H03M-007/42	
				Designated States (Regional):	DE FR GB
DE 695120852	E			H03M-007/42	Based on patent EP 678986
JP 3522331	B2		11	G06F-005/00	Previous Publ. patent JP 7295785

Abstract (Basic): EP 678986 A

The data **compression** system generates from an original data stream working data streams. Two sequential working data strings are combined to form a combined string. A **dictionary** is generated by registering the combined strings with occurrence frequency higher than a given value with a **dictionary** number.

The combined strings in the data stream are replaced with the **dictionary** numbers corresponding to the combined strings in the **dictionary**. Data stream of digital input signal is stored in store (1) and data **compression** is performed with registering strings appearing in data stream in **dictionary** in second store (2).

ADVANTAGE - Data transmission period and decompression period can be considerably shortened so as to permit high speed image display in case of image data.

Dwg.1/13

Abstract (Equivalent): US 5604495 A

A data **compression** method, in which a data stream of a digital input signal is stored in first storage means and data **compression** of the data stream is performed with registering strings appearing in said data stream in a **dictionary** of second storage means, comprising:

performing first process step for designating R representing a repetition number of the following third to fifth process steps wherein R is an integer smaller than or equal to D, with taking a total data capacity of the original data stream being S multiply N bits, wherein S is an integer greater than or equal to 2 and N is an integer greater

than or equal to 3, and a **maximum dictionary register number D** where D is 2s;

performing second process step for separating the original data stream of S bit length stored in said storage means and generating a working data stream by adding a non-conducting identifier bit for conversion into a working data stream having (S+1) bit working strings;

performing third process step for detecting combined string consisted of two sequential working strings in said working data stream up to D/Rth order in descending order from working string having largest occurrence frequency, and having occurrence frequency greater than or equal to 3;

performing fourth process step for registering **compression dictionary** data of (S+1) bits consisted of **dictionary** number and **compression** identifier bit, in said second storage means, corresponding to each of combined strings detected by said third process step; and

fifth process step for replacing combined string among combined strings in said working data stream matching with one of combined strings registered in said second storage means, with the **compression dictionary** data corresponding to the matching combined string,

repeating said third to fifth process steps for R times with taking data stream replaced through said fifth process step as working data stream for outputting data stream stored in said first storage means and all combined string and **compression dictionary** data stored in said second storage means, after R times repletion, as **compressed** data.

Dwg.1/13

Title Terms: LOSS; TYPE; DATA; **COMPRESS** ; **DICTIONARY** ; SYSTEM; GENERATE; ORIGINAL; DATA; STREAM; WORK; DATA; STREAM; COMBINATION; TWO; SEQUENCE; WORK; DATA; STREAM; GENERATE; **DICTIONARY** ; REGISTER; COMBINATION; STRING ; OCCUR; FREQUENCY; HIGH; VALUE; **DICTIONARY** ; NUMBER

Derwent Class: T01; U21

International Patent Class (Main): G06F-005/00; H03M-007/00; H03M-007/42

International Patent Class (Additional): H03M-007/46

File Segment: EPI

Manual Codes (EPI/S-X): T01-D02; U21-A05A2A

? t29/9/48,52

29/9/48 (Item 48 from file: 347)

DIALOG(R)File 347:JAPIO

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06565676 \*\*Image available\*\*

DATA **COMPRESSION** METHOD AND DATA **COMPRESSION** UNIT

PUB. NO.: 2000-151419 [JP 2000151419 A]

PUBLISHED: May 30, 2000 (20000530)

INVENTOR(s): MIZUSHIMA YASUKAZU

KOYAIZU SATOSHI

USAMI MASASHI

APPLICANT(s): ASAHI CHEM IND CO LTD

APPL. NO.: 10-315116 [JP 98315116]

FILED: November 05, 1998 (19981105)

INTL CLASS: H03M-007/40; G06F-017/21

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a data **compression** unit that can quickly retrieve an address of a **dictionary** memory on which new information is



going to be overwritten and where the power consumption of the **dictionary** memory can be reduced.

SOLUTION: A **dictionary** memory 4B to build up a **dictionary** used for data **compression** consists of four memories 41-43 that are operated independently of each other. When a CPU 2 discriminates that the number of character data to be stored in, e.g. the memory 42 reaches a **maximum** registration **number**, the CPU 2 activates only the memory 42 that stores slave node addresses to overwrite new character data to the memory 42. Thus, a retrieval circuit 6 sequentially retrieves addresses to which no slave node address is written from a head address of the memory 42 that is in operation and starts 2nd and succeeding address retrievals from an address next to the address retrieved at the 1st retrieval.

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29/9/52 (Item 52 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04859933 \*\*Image available\*\*  
DATA **COMPRESSING** DEVICE

PUB. NO.: 07-152533 [JP 7152533 A]  
PUBLISHED: June 16, 1995 (19950616)  
INVENTOR(s): HAYASHI TAKAAKI  
APPLICANT(s): KYOCERA CORP [358923] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 05-299376 [JP 93299376]  
FILED: November 30, 1993 (19931130)  
INTL CLASS: [6] G06F-005/00; H03M-007/30  
JAPIO CLASS: 45.1 (INFORMATION PROCESSING -- Arithmetic Sequence Units);  
42.4 (ELECTRONICS -- Basic Circuits)

#### ABSTRACT

PURPOSE: To provide a data **compressing** device and its method which can quickly grow a **dictionary** and can improve the data **compressing** effect by registering plural partial data strings in a single **dictionary** registration processing when the partial input data strings are sequentially registered in the **dictionary** and then the input data are **compressed** and coded by referring to the **dictionary**.

CONSTITUTION: A data **compressing** device 102 consists of a longest string coincidence retrieving part 104 which retrieves the longest one of symbol strings registered in a **dictionary** 105 that is coincident with a partial data string of an input data string 101, a coding part 106 which codes the index of the longest coincident symbol string, and a **dictionary** register part 107 which registers a symbol that connects the symbols including the 1st symbol of the coded longest coincident symbol string through the MaxEnt-th symbol decided by the **largest** register **number** set value 108 to the longest coincident symbol string coded just before the relevant time point into the **dictionary** 105.

? t29/9/56,61

29/9/56 (Item 56 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2005 JPO & JAPIO. All rts. reserv.

04075220 \*\*Image available\*\*

# DATA COMPRESSING DEVICE

PUB. NO.: 05-066920 [JP 5066920 A]  
PUBLISHED: March 19, 1993 (19930319)  
INVENTOR(s): HOSONO MASATAKA  
TAMURA RYUTARO  
APPLICANT(s): ALPS ELECTRIC CO LTD [001009] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 03-254541 [JP 91254541]  
FILED: September 06, 1991 (19910906)  
INTL CLASS: [5] G06F-005/00; G06F-015/20  
JAPIO CLASS: 45.1 (INFORMATION PROCESSING -- Arithmetic Sequence Units);  
45.4 (INFORMATION PROCESSING -- Computer Applications)  
JOURNAL: Section: P, Section No. 1577, Vol. 17, No. 390, Pg. 137, July 21, 1993 (19930721)

## ABSTRACT

PURPOSE: To provide a data **compressing** device which can keep the high data **compressing** efficiency and also can effectively use a memory.  
CONSTITUTION: A data **compressing table** 10 is continuously **retrieved** for each character or bit until the **match** is secured between the input data and the **retrieving** data in the maximum length. Then the **compressed** code word corresponding to the **match retrieving** data of the maximum length is transmitted in place of an input data train, and the **retrieving** data on the contents of the unmatched input data length and its corresponding **compressed** code word are generated on the **table** 10. When the **compressed** code words shown in the least variable bit number exceed the **maximum number** that can be shown in a bit, the **table** 10 is updated. Thus a fixed data **compression table** is not required since the **compressed** code word is generated by the **table** 10. As a result, the high **compressing** efficiency is kept even with various text data.

29/9/61 (Item 61 from file: 347)

DIALOG(R) File 347:JAPIO

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03420228 \*\*Image available\*\*

REPORT FILE PAGE INFORMATION **TABLE** MANAGEMENT SYSTEM

PUB. NO.: 03-083128 [JP 3083128 A]  
PUBLISHED: April 09, 1991 (19910409)  
INVENTOR(s): OKAMURA KAZUYUKI  
NISHI TATSUMI  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 01-221014 [JP 89221014]  
FILED: August 28, 1989 (19890828)  
INTL CLASS: [5] G06F-009/06  
JAPIO CLASS: 45.1 (INFORMATION PROCESSING -- Arithmetic Sequence Units)  
JOURNAL: Section: P, Section No. 1221, Vol. 15, No. 255, Pg. 80, June 27, 1991 (19910627)

## ABSTRACT

PURPOSE: To shorten the average processing time required for acquisition of a record whose reference is requested by first regularly storing page information in a report file information **table** with a page as the unit unconditionally and repeatedly reconstituting the information **table** when the quantity of page information reaches a **maximum number of entries**.

CONSTITUTION: A page information storage means 12 successively stores page information including the page number, the line number, and the record address in a report file page information **table 14** at the time of reading in records from a report file 2. When the quantity of page information stored in the report file page information **table 14** by the page information storage means 12 exceeds the **maximum number of entries** of the report file page information **table**, a page information **compressing** means 13 extends page intervals to **compress** page information. Thus, the report file page information **table 14** is dynamically reconstituted, and a page information **retrieving** means 15 **retrieves** page information in the report file page information **table 14** to return the record address most suitable for the **retrieval** condition, and the record is quickly acquired.

File 6:NTIS 1964-2005/May W5  
     (c) 2005 NTIS, Intl Cpyrght All Rights Res  
 File 2:INSPEC 1969-2005/May W5  
     (c) 2005 Institution of Electrical Engineers  
 File 8:EI Compendex(R) 1970-2005/May W5  
     (c) 2005 Elsevier Eng. Info. Inc.  
 File 34:SciSearch(R) Cited Ref Sci 1990-2005/May W5  
     (c) 2005 Inst for Sci Info  
 File 35:Dissertation Abs Online 1861-2005/May  
     (c) 2005 ProQuest Info&Learning  
 File 65:Inside Conferences 1993-2005/Jun W1  
     (c) 2005 BLDSC all rts. reserv.  
 File 94:JICST-EPlus 1985-2005/Apr W3  
     (c)2005 Japan Science and Tech Corp(JST)  
 File 95:TEME-Technology & Management 1989-2005/May W1  
     (c) 2005 FIZ TECHNIK  
 File 99:Wilson Appl. Sci & Tech Abs 1983-2005/May  
     (c) 2005 The HW Wilson Co.  
 File 111:TGG Natl.Newspaper Index(SM) 1979-2005/Jun 06  
     (c) 2005 The Gale Group  
 File 144:Pascal 1973-2005/May W5  
     (c) 2005 INIST/CNRS  
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 File 266:FEDRIP 2005/Jun  
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     (c) 1998 Inst for Sci Info  
 File 483:Newspaper Abs Daily 1986-2005/Jun 07  
     (c) 2005 ProQuest Info&Learning  
 File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13  
     (c) 2002 The Gale Group  
 File 603:Newspaper Abstracts 1984-1988  
     (c)2001 ProQuest Info&Learning

Set	Items	Description
S1	5111145	MAXIMUM OR MAXIMIS? OR MAXIMIZ? OR GREATEST OR LARGEST OR - HIGHEST OR OPTIMAL? OR OPTIMUM? OR OPTIMIS? OR OPTIMIZ?
S2	97914	S1(2W) (ENTRY? OR ENTRIES OR POPULAT? OR CONTENT? ? OR NUMB- ER? ? OR QUANTITY? OR QUANTITIES OR NUMERIC?? ?)
S3	17679	S1(2W) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TERMS OR TEMINOLOGY OR UNIT OR UNITS OR ITEM OR ITEMS)
S4	3045	NGRAM? ? OR BIGRAM? ? OR (BI OR N)()GRAM? ?
S5	1665778	COMPRESS? OR COMPACT? OR PACK? ? OR PACKING OR PACKED
S6	8617252	LENGTH? OR SIZE? ? OR DIMENSION? ? OR VOLUME? ? OR PROPORT- ION? ? OR SPACE OR SPATIAL
S7	338242	S6(2N) (MINIMI? OR SHORT?? ? OR SHORTEN? OR CONDENS??? ? OR CONDENSAT? OR REDUC????? ? OR RED? ? OR DIMIN? OR DECREAS? OR DECREM? OR ABBREVIAT?)
S8	61385	S6(2N) (KEY? ? OR STRING? ? OR WORD? ? OR CHARACTERSTRING? - OR SUBSTRING? OR LEXEME? OR MORPHEME? OR TERM OR TERMS)
S9	103246	LEXIC??? ? OR VOCABULAR? OR DICTIONAR?
S10	942548	CACHE? ? OR CONTAINER? OR RECEPTACLE? OR DATABASE? OR DATA- SET? OR DATABANK? OR DATASTORE? OR DATAFILE? OR DATACOLLECTIO- N?
S11	198	DATALIBRAR? OR DATADEPOSIT? OR DATAREPOSIT? OR DATAWAREHOU- S?
S12	517758	DATA() (BASE? ? OR SET? ? OR BANK? ? OR STORE? ? OR STOREHO- USE? OR FILE? ? OR COLLECTION? ? OR LIBRAR? OR DEPOSIT? OR RE- POSIT? OR WAREHOU? OR WARE()HOUSE?)
S13	8064	S10:S12(3N) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TER-

MS)

S14	1366471	TABLE OR TABLES OR TABULAR? OR ARRAY? ? OR HASHTABLE?
S15	9697019	SEARCH? OR RETRIEV? OR FETCH? OR MATCH? OR COMPAR??? ? OR -
		COMPARISON? OR COMPARAT? OR EXTRACT? OR QUERY? OR QUERIE? ?
S16	6406	S2:S3 AND (S4:S5 OR S7)
S17	93	S16 AND S8
S18	39	S16 AND S9
S19	3	S16 AND S13
S20	258	S16 AND S14
S21	28	S17 AND (S20 OR S15)
S22	85	S20 AND S15
S23	152	S18:S19 OR S21:S22
S24	59	S23/2000:2005
S25	93	S23 NOT S24
S26	68	RD (unique items)
S27	40	S17/2000:2005
S28	32	S17 NOT (S27 OR S23)
S29	25	RD (unique items)
?		

? t26/7/16

26/7/16 (Item 8 from file: 2)

DIALOG(R)File 2:INSPEC

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5792324 INSPEC Abstract Number: C9802-4240P-024

**Title:** Dictionary compression on the PRAM

**Author(s):** Hirschberg, D.S.; Stauffer, L.M.

**Author Affiliation:** California Univ., Irvine, CA, USA

**Journal:** Parallel Processing Letters vol.7, no.3 p.297-308

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**Publication Date:** Sept. 1997 **Country of Publication:** Singapore

**CODEN:** PPLTEE **ISSN:** 0129-6264

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**Material Identity Number:** 0886-97004

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Theoretical (T)

**Abstract:** Parallel algorithms for lossless data **compression** via **dictionary compression** using optimal, longest fragment first (LFF), and greedy parsing strategies are described. **Dictionary compression** removes redundancy by replacing substrings of the input by references to string stored in a **dictionary**. Given a static **dictionary** stored as a suffix tree, we present a CREW PRAM algorithm for optimal **compression** which runs in  $O(M + \log M \log n)$  time with  $O(nM/\sup 2/)$  processors, where it is assumed that  $M$  is the maximum length of any **dictionary** entry. Under the same model, we give an algorithm for LFF **compression** which runs in  $O(\log/\sup 2/ n)$  time with  $O(n/\log n)$  processors where it is assumed that the **maximum dictionary entry** is of length  $O(\log n)$ . We also describe an  $O(M + \log n)$  time and  $O(n)$  processor algorithm for greedy parsing given a static or sliding-window **dictionary**. For sliding-window **compression**, a different approach finds the greedy parsing in  $O(\log n)$  time using  $O(nM \log M/\log n)$  processors. Our algorithms are practical in the sense that their analysis elicits small constants. (16 Refs)

Subfile: C

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Set	Items	Description
S1	7614327	MAXIMUM OR MAXIMIS? OR MAXIMIZ? OR GREATEST OR LARGEST OR - HIGHEST OR OPTIMAL? OR OPTIMUM? OR OPTIMIS? OR OPTIMIZ?
S2	157248	S1(2W) (ENTRY? OR ENTRIES OR POPULAT? OR CONTENT? ? OR NUMB- ER? ? OR QUANTITY? OR QUANTITIES OR NUMERIC?? ?)
S3	55564	S1(2W) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TERMS OR TEMINOLOGY OR UNIT OR UNITS OR ITEM OR ITEMS)
S4	161	NGRAM? ? OR BIGRAM? ? OR (BI OR N) ()GRAM? ?
S5	1365271	COMPRESS? OR COMPACT? OR PACK? ? OR PACKING OR PACKED
S6	7081340	LENGTH? OR SIZE? ? OR DIMENSION? ? OR VOLUME? ? OR PROPORT- ION? ? OR SPACE OR SPATIAL
S7	206052	S6(2N) (MINIMI? OR SHORT?? ? OR SHORTEN? OR CONDENS??? ? OR CONDENSAT? OR REDUC????? ? OR RED? ? OR DIMIN? OR DECREAS? OR DECREM? OR ABBREVIAT?)
S8	95502	S6(2N) (KEY? ? OR STRING? ? OR WORD? ? OR CHARACTERSTRING? - OR SUBSTRING? OR LEXEME? OR MORPHEME? OR TERM OR TERMS)
S9	162351	LEXIC??? ? OR VOCABULAR? OR DICTIONAR?
S10	1315086	CACHE? ? OR CONTAINER? OR RECEPTACLE? OR DATABASE? OR DATA- SET? OR DATABANK? OR DATASTORE? OR DATAFILE? OR DATACOLLECTIO- N?
S11	1368	DATALIBRAR? OR DATADEPOSIT? OR DATAREPOSIT? OR DATAWAREHOU- S?
S12	327259	DATA() (BASE? ? OR SET? ? OR BANK? ? OR STORE? ? OR STOREHO- USE? OR FILE? ? OR COLLECTION? ? OR LIBRAR? OR DEPOSIT? OR RE- POSIT? OR WAREHOU? OR WARE()HOUSE?)
S13	14425	S10:S12(3N) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TER- MS)
S14	1973047	TABLE OR TABLES OR TABULAR? OR ARRAY? ? OR HASHTABLE?

S15 8969467 SEARCH? OR RETRIEV? OR FETCH? OR MATCH? OR COMPAR??? ? OR -  
 COMPARISON? OR COMPARAT? OR EXTRACT? OR QUERY? OR QUERIE? ?  
 S16 1779 S2:S3(S) (S4:S5 OR S7)  
 S17 35 S16(S)S8  
 S18 11 S16(S)S9  
 S19 2 S16(S)S13  
 S20 131 S16(S)S14  
 S21 77 S20(S)S15  
 S22 116 S17:S19 OR S21  
 S23 85 S22/2000:2005  
 S24 31 S22 NOT S23  
 S25 28 RD (unique items)

25/3,K/6 (Item 4 from file: 15)  
 DIALOG(R)File 15:ABI/Inform(R)  
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01485274 01-36262

#### **Compression theory**

McGillis, Peggy; Nichols, Mina; Terry, Britt  
 Computer Technology Review PP: 60-61+ Summer 1997  
 ISSN: 0278-9647 JRNL CODE: CTN  
 WORD COUNT: 2498

...TEXT: symbol. The longer the match, the better the compression ratio.

An advantage to using a **dictionarybased** method is that **dictionary** entries may be of various lengths. For instance, an incrementing pattern of 00h to FFh may require only one entry into the **dictionary**. Patterns consisting of continuous repeating data, such as all FFh or all 00h, will **compress** very efficiently assuming the **maximum dictionary word length** is sufficiently large to describe the repeating portion. The importance of this technology in today...

...many tablespaces of database files contain repeating text which can easily be included in the **dictionary**.

This method of data compression focuses primarily on the encoding dictionary. Simple coding methods generally...



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Set	Items	Description
S1	8447158	MAXIMUM OR MAXIMIS? OR MAXIMIZ? OR GREATEST OR LARGEST OR - HIGHEST OR OPTIMAL? OR OPTIMUM? OR OPTIMIS? OR OPTIMIZ?
S2	130099	S1(2W) (ENTRY? OR ENTRIES OR POPULAT? OR CONTENT? ? OR NUMB- ER? ? OR QUANTITY? OR QUANTITIES OR NUMERIC?? ?)
S3	66683	S1(2W) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TERMS OR TEMINOLOGY OR UNIT OR UNITS OR ITEM OR ITEMS)
S4	111	NGRAM? ? OR BIGRAM? ? OR (BI OR N)()GRAM? ?
S5	1784071	COMPRESS? OR COMPACT? OR PACK? ? OR PACKING OR PACKED
S6	7693568	LENGTH? OR SIZE? ? OR DIMENSION? ? OR VOLUME? ? OR PROPORT- ION? ? OR SPACE OR SPATIAL
S7	258068	S6(2N) (MINIMI? OR SHORT?? ? OR SHORTEN? OR CONDENS??? ? OR CONDENSAT? OR REDUC????? ? OR RED? ? OR DIMIN? OR DECREAS? OR DECREM? OR ABBREVIAT?)
S8	96888	S6(2N) (KEY? ? OR STRING? ? OR WORD? ? OR CHARACTERSTRING? - OR SUBSTRING? OR LEXEME? OR MORPHEME? OR TERM OR TERMS)
S9	141592	LEXIC??? ? OR VOCABULAR? OR DICTIONAR?
S10	2648497	CACHE? ? OR CONTAINER? OR RECEPTACLE? OR DATABASE? OR DATA- SET? OR DATABANK? OR DATASTORE? OR DATAFILE? OR DATACOLLECTIO- N?
S11	2371	DATALIBRAR? OR DATADEPOSIT? OR DATAREPOSIT? OR DATAWAREHOU- S?
S12	544864	DATA() (BASE? ? OR SET? ? OR BANK? ? OR STORE? ? OR STOREHO- USE? OR FILE? ? OR COLLECTION? ? OR LIBRAR? OR DEPOSIT? OR RE- POSIT? OR WAREHOUS? OR WARE()HOUSE?)
S13	30257	S10:S12(3N) (WORD? ? OR LEXEME? OR MORPHEME? OR TERM OR TER- MS)
S14	2761940	TABLE OR TABLES OR TABULAR? OR ARRAY? ? OR HASHTABLE?
S15	7940560	SEARCH? OR RETRIEV? OR FETCH? OR MATCH? OR COMPAR??? ? OR - COMPARISON? OR COMPARAT? OR EXTRACT? OR QUERY? OR QUERIE? ?
S16	2188	S2:S3(S) (S4:S5 OR S7)
S17	40	S16(S)S8
S18	2	S16(S)S9
S19	1	S16(S)S13
S20	86	S16(S)S14
S21	21	S20(S)S15
S22	62	S17:S19 OR S21
S23	23	S22/2000:2005

S24	39	S22 NOT S23
S25	29	RD (unique items)
S26	25	S20/2000:2005
S27	43	S20 NOT (S26 OR S22)
S28	30	RD (unique items)
?		

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Set	Items	Description
S1	3	AU=PECHENY B?

? tl/ti/all

1/TI/1 (Item 1 from file: 350)  
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Desulphurising heavy petroleum residues - by heating, applying voltage  
and adding barium hydroxide and one or both of ferric oxide and red lead  
in defined ratios

1/TI/2 (Item 2 from file: 350)  
DIALOG(R)File 350:(c) 2005 Thomson Derwent. All rts. reserv.

Desulphurisation of heavy oil residues - by heating and passing current  
in the presence of oxide(s) of iron and/or lead and barium hydroxide

1/TI/3 (Item 1 from file: 349)  
DIALOG(R)File 349:(c) 2005 WIPO/Univentio. All rts. reserv.

METHOD OF DESULPHURATION OF HEAVY OIL RESIDUES  
PROCEDE DE DESULFURATION DE RESIDUS D'HUILE LOURDE